COGNITION, COMPUTERS AND CREATIVE WRITING

by

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This thesis has been composed and written by myself and the work described in it is my own.

M. Sharples.

ABSTRACT

This thesis describes a teaching scheme for creative writing that takes account of a child's developing cognitive abilities. It first provides the means for a child to explore language and gain sufficient understanding of linguistic concepts and processes to be able to control the acquisition of new writing skills. This is a preparation for the second part of the scheme, in which a child applies this understanding to her own creative writing. The child is given practice in generating and transforming text at different structural levels, and in selecting text forms that are appropriate to the audience and function of the writing.

Computer programs form an integral part of the scheme. They provide representations of two abstract systems - a generative grammar and an associative network - which the child manipulates to investigate language structure and plans. The programs also offer a dynamic medium for text creation and revision.

The teaching scheme was tested with six eleven year old children who visited the University for 29 sessions of 60-70 minutes duration, over three school terms. It was presented to the children through written worksheets, containing language exercises, writing activities, and instructions for the use of the computer.

The children were set pre and post descriptive and narrative essays. The same essays were also set for a control group of children who followed normal classroom teaching for the period of the project. The main method of assessment was a feature analysis of the

essays. They were examined for the occurrence of 'mature' and 'immature' linguistic features, at the word/phrase, sentence, and section level of text. The presence of mature features indicates that the writer is able to reflect on the form of language and can create text to a well-structured and coherent plan.

During the first part of the scheme, the children formed into two distinct groups. Two children performed poorly in all activities that involved the understanding and manipulation of language. The four remaining children performed well in these activities and enjoyed the experience of exploring language with the aid of a computer. These four children were taken on to the second stage of the scheme. An analysis of the pre and post essays showed developments in the writing ability of all four children. Each child, however, gained a different set of skills, and appeared to be using the writing projects to explore a particular aspect of style. We suggest that such explorations are valuable, enabling a child to discover the constraints and possibilities of creative writing.

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CHAPTER 1

AN OVERVIEW OF THE THESIS

The Bullock Report, A Language for Life (1975), on the teaching of English in schools contains the following recommendation:

> Pupils should be given the opportunity to write for a variety of readers and audiences. They should be faced with the need to analyse the specific task, to choose the language appropriate to it and to establish the criteria by which to judge what they have achieved. (p.527)

This statement, and others in the concluding section of the Report, gave authority to a new approach to the teaching of English, that combines descriptive linguistics with a cognitive theory of writing development. This thesis investigates the hypothesis that a computer-based teaching scheme that embodies this approach can aid a child's development and control of writing skills.

1. COGNITIVE THEORY OF WRITING

Around the age of eleven, a child becomes able to divorce language from its immediate context, so that it is an object to be mentally shaped and revised. The child acquires this meta-linguistic awareness as part of normal cognitive development:

> The adolescent (eleven to fifteen) can reason abstractly, since she can formally conceptualize possible transformations and their results (instead of having to imagine them figuratively or carry them out physically). That is, she can apply operations to operations, so that she can reason about her own reasoning independently of figurative (eg. perceptual or semantic) content. (Boden, 1979, p. 74)

These are powerful abilities, but if a child is to make good use of them she needs tools for reasoning: a simple meta-language with which

to talk about her thoughts and her language, an understanding of the process of writing, and an appreciation of the rules and structures of language. Appropriate teaching can then help a child to classify and organise her knowledge of language, realise its limitations, and deliberately explore new skills, to extend the range and power of her creative writing.

2. TEACHING SCHEME

The teaching scheme described in this thesis is in two parts. The first develops the child's explicit knowledge of language and equips her with a small active vocabulary of linguistic terms. The child explores structure and constraint in language, is introduced to grammar as a productive system and expands her active vocabulary of linguistic terms. This lays a foundation for the second part of the scheme, in which the child acquires new techniques for creative writing.

Computer programs are integral components of the scheme. They provide representations of two abstract systems - a generative grammar and an associative network - which the child manipulates to investigate language structure and story-plans. The programs also offer a dynamic medium for text creation and revision.

3. THE INVESTIGATION

The teaching scheme was tested with six eleven year old children who visited the University for 29 sessions of 60-70 minutes duration, over a nine month period. It was presented to the children through written worksheets, containing language and writing activities, and instructions for the use of the computer.

4. EVALUATION

The experimental group children were observed throughout the project and a record was kept of each draft of their written productions. This provided the material for an analysis of the development of each child's writing process. A control group of children, from the same Primary 7 class, were given normal classroom teaching during the periods of the investigation. They also paid occasional visits to the University and began a computer-based teaching scheme, exploring mathematical concepts through computer programming. The aim was to offer them an enjoyable computing experience in the same surroundings as the experimental group, but in a different subject area.

Both groups were set descriptive and narrative essays to write, at the start and end of the investigation. The essays were assessed by two methods: impression marking by two independent teachers, and a 'feature analysis', whereby the essays are judged by the occurrence of linguistic features that characterise 'immature' and 'mature' writing.

We shall provide evidence that the teaching scheme extended the range and maturity of writing from those children who were able to objectify and manipulate language. The remaining children profited little from the teaching scheme and continued to produce prose that was terse and self-oriented.

5. LAYOUT OF THE THESIS

Chapter two investigates a child's development of writing abilities and proposes 'feature analysis' as a method of detecting

short term developments in a child's writing style.

Chapter three presents a critical survey of the teaching of writing in British schools and a review of literature related to the use of computers in English teaching.

In chapter four the aims and work plan of the teaching scheme are presented. The chapter includes a description of the worksheets and other teaching material used by the children.

Chapter five describes the computer programs used in the scheme.

Chapter six describes the investigation and chapter seven deals with the progress of the experimental group, concentrating on changes in the children's writing process.

Chapter eight contains an assessment of the pre and post essays produced by the experimental and control group children.

The last chapter is devoted to conclusions that may be drawn from the project and to proposals for further research.

CHAPTER 2

A CHILD'S DEVELOPMENT OF WRITING ABILITIES

In this chapter we investigate children's writing and a child's development of writing abilities. By the age of 9-10 children 'possess the core of language resources' (Harpin, 1976 p53) and, in general, produce text that is well-formed and has all the basic grammatical structures (Hunt 1965). Nevertheless, children's writing contains features not generally found in mature adult prose. We suggest that a child's process of writing is very different from that of an adult. A mature writer can reflect on the content, style, and structure of her text, consider alternative ways of expressing an idea, and so control her writing process. Young children lack this ability to decentre and use simple intuitive heuristics for writing, producing texts that are often fragmentary and restricted in style and structure. If a child is to take deliberate control of her writing, she must first look on language as a substance to be moulded and altered.

We suggest that a child passes through stages of linguistic development, related to the Piagetian stages of cognitive development, and that these stages have a strong effect on a child's development of writing abilities. A child does not make a smooth gradual transition from writing based on conversation to a more deliberate and cultivated style. During the crucial period of change, as the child reaches the stage of formal operations, her overall writing style may reach a plateau, or even decline. We propose a method of evaluating written style, based on the presence of

linguistic and structural features in text, that may detect both a child's transition to formal operations and her later acquisition of particular writing techniques.

1. CHILDREN'S WRITING

(1)

> I am standing near the Surfer, watching all of the people paying, then climbing into the empty cars, then it starting up and everybody screaming and the loud music, children eating toffee apples and Candy Floss holding flags and balloons. It is getting late the children leave and only adults are left to spend money.
>
> The ghost train goes in and you hear screaming, then out comes frightened passengers. Only a few people remain now, the screams die down, the shows pack away, only a few people remain, walking, through the quiet empty shows that will be alive once more.
>
> I remembered the penny arcade,the children shouting, winning money, losing money, I remembered how the people screamed on the big wheel which they would do again the next day.

(2)

> The long tunnel under the parade was the noisiest, lowest, cheapest section of Brighton's amusements. Children rushed past them in paper sailor-caps marked 'I'm no Angel'; a ghost train rattled by carrying courting couples into a squealing and shrieking darkness. All the way along the landward side of the tunnel were the amusements; on the other little shops: Magpie Ices, Photoweigh, Shellfish, Rocko. The shelves rose to the ceiling: little doors let you in to the obscurity behind, and on the sea side were no doors at all, no windows, nothing but shelf after shelf from the pebbles to the roof: a breakwater of Brighton rock facing the sea. The lights were always on in the tunnel; the air was warm and thick and poisoned with human breath.

The two extracts given above are both on the same theme - a description of a fairground - and both are approximately the same length. Neither contains gross technical errors of syntax,

punctuation, or spelling. Yet the first is clearly written by a child (Anne, aged 11) and the second by a skilled adult writer (the extract is from 'Brighton Rock' by Graham Greene (Greene, 1938, p.177-178)).

How can we distinguish between the texts, in a way that might reveal the cognitive processes of the two writers? We might use terms like 'vigour' and 'sensitivity' to distinguish Greene's prose, or suggest that he 'successfully evokes the childhood memories of the reader'. This method of analysis relies on the skill of a reader to interpret the author's style and intentions, then package the assessment as written criticism. Since it incorporates the experience of the reader, interpretive analysis is a useful method of literary criticism, but a poor means to understanding the process of writing.

Another approach is to identify differences in the quantity of words or linguistic structures in the two texts. Harpin (1976) has produced six indices that 'show firm evidence of their value as measures of progress towards mature levels of language skill' (p59). These are:

(1) Average sentence length.

(2) Average clause length.

(3) An index of subordination (subordinate clauses as a proportion of all clauses).

(4) A weighted index of subordination (extra weight is given to a subordinate clause dependent on another subordinate clause, rather than the main clause, and to a clause containing a verbal constructions such as a participle, infinitive, or gerund).

(5) The ratio of 'uncommon' subordinate clauses to all subordinate clauses ('uncommon' here means any clause that is not an adverbial clause of time nor a noun clause acting as object).

(6) A personal pronoun index (the number of personal pronouns per 100 words).

Many other linguistic indices have been devised (Loban, 1963; Hunt 1965; Malgady & Barcher 1979; Golub & Frederick, 1970; Kidder, 1974). Golub & Frederick combined ten syntactic measures, similar to Harpin's, into a single index of 'syntactic density'. Kidder later added a second index of 'vocabulary intensity', measuring diversity and level of vocabulary, word building, and the use of multisyllable words, to form the most comprehensive of the quantitative linguistic measures.

Applied to the two extracts above, the 'syntactic density' index gives the Greene passage a score of 2.93, which puts it amongst writing by children of U.S. Grade Level 4 (age 9-10), and Anne's extract a score of 2.61, or Grade Level 3. The vocabulary intensity scores for the two extracts were identical, equivalent to writing at seventh grade (age 12-13).

The quantitative measures referenced above were all derived empirically, to correlate either with the age of the writer (Hunt, Loban, Harpin) or with an expert's judgement of writing samples (Golub & Frederick, Malgady & Barcher, Kidder). Although they may indicate a child's level of writing skills relative to his peers, they do not help to explain the writing process, nor a child's development of writing abilities.

2. THE DEVELOPMENT OF WRITING ABILITIES

A simple explanation of writing, one cherished by many school teachers, is that children gradually acquire more mature language through reading and practice in composition. If this were the only process then the writing of children taught together should develop at roughly the same rate. Harpin applied his indices to the writing of 290 children over six school terms and concludes:

> If age and practice were the only influences, the written language of any one 9-year-old would be much like that of any other. Children exposed to the same classroom environment would move forward more or less identically. Yet the reality is very different. Some children seem to advance very little over considerable periods of time...Others appear to mark time for months and then accelerate with startling rapidity to overhaul their peers. (Harpin, 1976, p.74)

Nor is there a steady age-related trend in writing taken from a group of children. Kidder studied the writing of children at six grade levels (ages 5.9-12.8), with approximately 20 children in each group. She found that:

> The pattern of development by age [for syntactic density] is generally one of increasing complexity in syntax, with one noted regression at the period 9.9-10.8 [years]...The analysis of vocabulary intensity of children's writing resulted in some curiosity-provoking patterns. There was evidence of increases in intensity in early years, plateaus or regressions in the middle years, and then an upward curve again in upper elementary years. (Kidder, 1974, p.89-90)

Kidder suggests that:

> [The study] has raised some interesting questions about patterns of language development in children. Further investigation of these patterns in children's writing should be made. The observed plateaus need to be studied. An attempt to identify the correlation between the patterns observed and stages described in learning theories such as Piaget's might be worthwhile. (p.93)

To understand children's writing development we need to look closely at their development of language and thought.

2.1. Linguistic and Meta-linguistic Development

Gleitman and her colleagues (Gleitman, Gleitman & Shipley, 1972) have investigated the linguistic skills of young children. Their work, along with that of Bohanon (1976) and Slobin (1971), suggests several clear stages of linguistic and meta-linguistic development:

Stage 1:

The child utters sounds and single words, but produces no grammatical patterns.

Stage 2:

Speech conforms to the rules of a series of increasingly complex grammars.

Stage 3:

The child is able to recognise ambiguous and deviant sentences - the first signs of meta-linguistic abilities. Gleitman reports an experiment in which three subjects, all aged two and a half, were asked to judge spoken sentences as 'good' or 'silly'. In some of the sentences the order of the noun and verb was reversed ('Ball me the bring'; 'Ball bring'). 'For all subjects, the reversed order sentences result in more judgements of silly.'

Stage 4:

Tacit rule knowledge: the child is able to discuss deviant examples of language in terms of particular linguistic rules,

but is able to refer to the rules only by example. For example, a child, aged 8, is being asked to comment on the grammatical correctness of sentences (Gleitman, Gleitman & Shipley, 1972):

> Experimenter: How about this one: 'Boy is at the door'?
> Child: (That's OK) if his name is 'Boy'. The kid is named 'John', see? 'John is at the door' or 'a boy is at the door' or 'he's knocking at the door'.

Stage 5:

Explicit rule knowledge - the child is able to formulate and apply general rules. A 15 year old boy (Sharples, 1978):

> 'You need a 'the' before an object'.

Gleitman's study indicates that by the age of 9-10[1] her subjects were aware of the rules governing language structure and this ability appears to be closely related to the Piagetian stage of formal operations:

> The adolescent's theory construction shows both that he has become more capable of reflective thinking and that his thought makes it possible for him to escape the concrete present toward the abstract and the possible. (Inhelder & Piaget, 1958, p.342)

The statement describes accurately the activity of Gleitman's eight-year-old subject. She is not concerned about the empirical truth of the statement ('Boy is at the door'), but about its conformity to grammatical rules. She has clearly been able to understand the concept represented by the deviant structure and has then generated

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[1]The report stresses that the subjects were particularly able children: 'we have taken some pains to interview children we suspected were highly articulate.'

three syntactically different sentences to express that concept.

An early study by Piaget, of children's behaviour while playing marbles, shows a similarity between meta-linguistic development and the acquisition of game rules:

> As to the child's behavioural conformity to the rules, the stages appeared to be as follows. In Stage 1, the child uses marbles simply as free-play materials, without any attempt to adapt to social rules. At most, the child develops private rituals of play which might be called 'motor rules'. Stage 2 (about 3-5 years) begins when the child imitates aspects of rule-regulated play behaviour of his elders. However, it is clear that the child assimilates what he sees to private, egocentric schemas; confident that he is playing by the older children's rules, he nontheless plays in an idiosyncratic, socially isolated manner, unintentionally flouting the rules at every turn. From about 7-8 years on, the child begins to play the game in a genuinely social way, in accordance with a mutually agreed on set of rules. But until about age 11-12, this grasp and conformity to the rules is still vague and approximate (Stage 3). From 11-12 on, however, they are completely understood and obeyed to the letter by all (Stage 4); moreover the act of codifying rules now seems to have a positive fascination for the child, eg. he is constantly engaged on revising the statutes to cover new and unforeseen contingencies. (Flavell, 1963, p.291-292)

These stages of rule-following behaviour appear to match the meta-linguistic stages, with 'explicit rule knowledge' corresponding to the 'act of codifying rules'.

The nature and validity of Piagetian stages is a matter for debate. Researchers have replicated some of Piaget's experiments, varying the subject matter and method of presentation, and have found no simple correspondence between a child and a stage. For example, a child's performance in a class inclusion task may be influenced by the presentation of the experimental material, or the wording of the instructions. The child may show operational thinking in one experiment but not in another isomorphic, but differently presented,

experiment (Donaldson 1978a, p48-50).

We do not, however, suggest that there is an exact correspondence between the growth of meta-linguistic knowledge and Piagetian stages of cognitive development, nor that a child will show the same linguistic ability at all levels of text and for all writing topics, merely that Piaget's developmental theory helps to explain both the linguistic structure of child and adult writing and children's written language development.

From the age of about 4 onwards a child is able to write text that conforms to the rules of grammar, but she borrows production techniques and linguistic structures from conversation. Although she learns some conventions appropriate to writing, such as spelling, punctuation, and simple rules of style, her 'grasp and conformity to the rules is still vague and approximate'. Then, as part of her natural cognitive development around the age of 9-11, the child becomes aware of her own thought and language and begins to take command of her writing.

Bereiter and Scardamalia (1982) suggest that there is no easy progression from an intuitive writing process, based on conversation, to mature reflective writing, but rather a major reconstruction of thought and language. The development of mature writing abilities requires several important transitions:

(1) from self-directed expression to communication with a remote audience - the writer must create and sustain a model of the intended reader and be aware that the reader may not share the non-linguistic linguistic context of the writing. Thus, a child

who writes about 'my family' for a school magazine should be aware that few readers will have her knowledge of the essay subject and that she may need to supply background information, such as character description or family history.

(2) from language production which is dependent on conversational feedback to autonomous production. The structure of a spoken conversation is guided by the conversational partners, but:

> in written composition all the supports are removed. This makes written composition not only a harder task than conversation, it makes it a radically different kind of task. (Bereiter & Scardamalia, 1982, p.2)

The writer must learn to generate language without the aid of encouragement, memory aids and grammatical support from a conversational partner.

(3) from open to closed discourse - speech is structured as it progresses, by the interplay of dialogue between the speakers and generally has no prearranged form or finishing point. Written composition is much more the result of premeditation, with a structure and conclusion that may be planned in advance by the author.

(4) from implicit to explicit manipulation of language - once the creation of language is taken outside the bounds of time then a writer can deliberately explore new writing techniques:

> The lasting character of print means that there is time to stop and think, so that the child has a chance to consider possibilities - a chance that he may never have had before. (Donaldson, 1978a, p.95)

The child is now in the throes of a cognitive upheaval. She is reading and writing with new insight, but with the burden of making sense of the patterns in prose. She is discovering that language has rules, styles and conventions, that it is both orderly and riddled with exceptions. In short, she is thinking too hard about her writing.

It is not surprising that the technical quality of a child's writing fluctuates during this period, producing the 'plateaus and regressions' of Kidder's indices. A child may well be doubly discouraged at this stage, as she comes to realise the full complexity of language and also suffers a drop in her marks for school essays. However painful, the transition to rule knowledge of language is important. The child gains conscious control of language and, with it, the ability to learn new techniques of planning, generating and revising text.

Bereiter and Scardamalia (1982) taught particular writing techniques to children aged 10-14, such as providing them with prompts to help them evaluate and revise each sentence in an essay. When each revision was judged separately (by an adult) the results were positive, in that changes for the better significantly exceeded changes for the worse. However, when whole essays were compared, there was no tendency for the revised version to be preferred to the originals. Bereiter and Scardamalia state:

> Our most successful experiments so far in affecting children's composing processes have not led to discernible overall improvements, as judged by impressionistic ratings. (p. 51)

They suggest that the children were learning to write in a

qualitatively different manner:

> It is what they are doing differently that counts, not how well they are doing compared to how well they previously did something of a different sort. (their emphasis) (p. 51)

The conscious direction of attention towards a new technique would appear to be as important to a writer as the rehearsal of a new activity is to a gymnast, allowing her to explore its applications and limitations, before incorporating it into an existing routine. Just as the overall performance of a gymnast may level out, or even decline, while she incorporates a new activity, so a writer's overall style may suffer temporarily as she acquires a new technique.

Once the child has come to terms with the vagaries of language, she has reached the stage of explicit rule knowledge of language. She can now extend her writing style in a more deliberate fashion, building up a stock of scripts and schemas. This is a gradual and endless process, used as much by a skilled author as a novice writer.

Impressionistic ratings and syntactic indices can indicate how well a child writes, but they may fail to detect new forms of writing that result from the child's transition to rule knowledge of language and are the foundations of a mature writing style. We require a method of text analysis that relates to a child's cognitive and linguistic development and can indicate short-term qualitative changes in children's written language.

The relation between writing abilities and cognitive development was the central concern of a study by Britton and colleagues (Britton et al., 1975) of 2212 pieces of writing by children aged 11-18. This

influential piece of research aimed to '[classify] writings according to the nature of the task; and, as far as possible, [find] a way of classifying that is both systematic and illuminating in the light shed on the writing process itself.' (p.3)

Drawing on work by Moffett (1968), Britton classified each piece of writing within two dimensions: the function of the writing, and its intended audience. The major function categories are 'expressive', 'poetic', and 'transactional'. Expressive is the embryonic function, seen in undeveloped children's writing and in personal or transitional adult writings, such as diary entries and rough drafts. Expressive writing 'stays close to the speaker'; to interpret it, a reader may need to understand the context in which it was written, or to share the writer's experiences.

From expressive writing emerge the poetic and transactional categories. In poetic writing, language is used as an art medium, for aesthetic appeal rather than direct communication. Transactional writing is for persuasion or conveying information. Britton subdivides this category to two further levels. The three categories are not exclusive: an advertisement, for example, may contain prose that is both poetic and transactional; a poem may be expressive and poetic. Within the three major categories the Greene extract is transactional or transactional/poetic and Anne's writing is transactional/expressive.

Britton links this method of classifying texts to the writer's emerging control of language for form and effect:

> From the area of least demand as far as the rules of [language] use are concerned, the learner-writer progresses

> by increasingly recognising and attempting to meet the demands of both poetic and transactional tasks, and by increasingly internalising forms and strategies appropriate to these tasks from what he reads and incorporating them into the pool of his resources. (Britton, 1975, p.85)

The categories not only indicate a child's level of writing abilities, but also fit a Piagetian explanation of writing development: a child produces expressive writing because he cannot analyse his experiences, control his language and so meet the needs of the task. The analysis is, however, far from complete. The expressive category is left vague, without subdivisions. Britton uses it to signify 'undeveloped' children's writing and 'unrefined' adult text. Thus, an adult also produces expressive writing, when he is writing only for himself, or is not concerned with creating a polished piece of prose, or is jotting down ideas to be later turned into a finished text. By being so diffuse, the category fails to differentiate the particular qualities of children's writing and to reflect the turbulence that accompanies transition to the more mature categories.

Another limitation lies in the method of assigning texts to a category:

> The process was an intuitive one, an exercise in empathy...It was our intention to employ in the categorising process the reader's more or less implicit awareness of the established conventions as we ordinarily operate them between writer and reader in our society. Only then, as an independent process, were the classified scripts to be submitted to further analysis. At this stage we hoped in particular to identify the linguistic features in the writing that were the vehicles for these conventions. (Had we allocated the scripts on the basis of any such features, we should of course have short-circuited the whole undertaking). (p.56)

Britton has not published a full account of the later investigation

and presents it as a research aim in 'The Development of Writing Abilities (11-18)'. He suggests that an analysis of linguistic features may lead to a greater awareness of the criteria by which readers classify text and to an understanding of the language resources a writer is drawing upon in a particular piece of writing.

Researchers at the Language in Education Centre at Exeter (Wilkinson et al., 1980) are carrying out such an analysis as part of a wider investigation of writing development. Wilkinson has devised:

> four models... to serve as systems of analysis - in the fields of cognition, affect, morals and style...In summary they are as follows:
>
> Cognitive. The basis of this model is a movement from an undifferentiated world, to a world organised by mind, from a world of instances to a world related by generalities and abstractions.
> Affective. Development is seen as being in three movements - one towards a greater awareness of self, a second towards a greater awareness of neighbour as self, a third towards an interengagement of reality and imagination.
> Moral. 'Anomy' or lawlessness gives way to 'heteronomy' or rule by fear of punishment, which in turn gives way to 'socionomy' or rule by a sense of reciprocity with others, which finally leads to the emergence of 'autonomy' or self-rule.
> Stylistic. Development is seen as choices in relation to a norm of the simple literal affirmative sentence, which characterises children's early writing. Features, such as structure, cohesion, verbal competence, syntax, reader awareness, appropriateness, undergo modification. (p.112-113)

In applying these models to children's writing, Wilkinson discusses some linguistic features that signal types of writing style. We shall draw these into a more detailed classification of linguistic and structural features, in which the features are expressly chosen to reveal the writer's cognition. By ignoring the moral and affective aspects of writing development we are not belittling their importance; they merely lie outside the scope of our teaching scheme.

3. FEATURE ANALYSIS

We begin by dividing text into three levels of structure: word and phrase; sentence; section. A section is taken to be either the entire text, or a major self-contained part of it (a complete story, a chapter of this thesis etc.). We shall describe features culled from a number of sources (Bereiter & Scardamalia, 1982; Halliday & Hasan, 1976; Harpin, 1976; Wilkinson et al., 1980; Sharples, 1979) that differentiate immature and mature writing at each text level. Some features, such as the noun clause as sentence subject, are indicators of a mature style (Harpin, 1976 p.71), but do not follow directly from a Piagetian description of writing development. They have been left out of the analysis. Table 1 gives a summary of the features. The presence of a 'mature' feature is not a guarantee of quality, nor can the features simply be summed to give a single 'maturity score'. They must be read as signposts that point, more or less accurately, toward writing produced at an early or late stage of cognitive development. They demand critical interpretation, but interpretation based on defined linguistic characteristics that provide a basis for comparison and refutation.

3.1. Word Level Features

Returning to the descriptions of fairgrounds, although Anne uses a greater number of different words than Graham Greene (91 against 84) she repeats content words (ie nouns, verbs, adjectives, and adverbs). 'People' occurs four times in her passage, 'money' and 'children' three times. The only content word that appears more than twice in Greene's passage is 'tunnel'. Repetition of a theme word can be used as a deliberate cohesive device, but the noun most frequently

FEATURES FOUND IN IMMATURE WRITING	
Word and phrase level:	Repetition of content words. Ambiguity from failure to substitute pronouns. Unspecific words. Speech idioms.
Sentence level:	Coordination of sentences by 'then', 'and', and 'but'.
Section level:	Arbitrary order and single level of detail in descriptions. Exponential increase in pace. 'Chain' and 'incomplete schema-directed' text forms.
FEATURES FOUND IN MATURE WRITING	
Word and phrase level:	Unusual choice of word. Abstract nouns. Metaphor and simile. Multiple modifiers.
Sentence level:	Cohesive devices (endophera, substitution, ellipsis) Multiple levels of subordination. Apposition. Reflective commentary. Coordination of sentences by complex relational words, eg. 'nevertheless'; 'instead'.
Section level:	Setting and characterisation in narrative. Changing levels of detail in description: 'focussing'. Rhetorical and figurative devices. Retrospection and subplots in narrative.

Table 1. Features in immature and mature writing.

used by Anne, 'people', is also the least specific.

Anne's phrase 'people screamed on the big wheel' can be contrasted with Greene's 'carrying courting couples into a squealing and shrieking darkness'. The term 'courting couples' is more specific than 'people' and Greene employs the pair of modifiers 'squealing and shrieking' to add alliterative power to the phrase.

Two other sets of multiple modifiers - 'noisiest, lowest, cheapest' and 'warm and thick and poisoned' appear in Greene's passage, none in Anne's.

None of the other immature word and phrase level features (speech terms; ambiguity through failure to substitute pronouns) occurs in Anne's passage, but they do appear frequently in the writing of other children. An extreme example of ambiguity arising from the overuse of pronouns is this 10-year-old child's description of a robot:

> The machine couldn't move but his head could turn left and right and the board moved up and down and across the way. It had two hands with little knobs on at both of the hands and it was made of foam so it couldn't break it. It was held up by a long frame which naild into the wall.

Speech idioms need to be judged in context, since a mature writer may deliberately create a colloquial style. In the following sentence, from a piece of expository writing about a visit to a robot, the words 'super', 'really' and 'love to' are clearly incongruous and drawn from verbal language:

> Freddy is a super robot, I would really love to own him.

As for the abstract and metaphorical terms that characterise mature writing, neither passage contains the former, but Greene provides a powerful metaphor - the one that gives his book its title: 'a breakwater of Brighton Rock facing the sea'.

3.2. Sentence Level

At the next higher level, a prominent feature of immature writing is the simple coordination of sentences with 'then', 'and',

or 'but. Comparing the two passages, Greene combines sentences with 'and' once, Anne twice, plus three times with 'then'. The word 'then' generally signals a type of text construction found frequently in children's writing - the string of sequential events - and this is discussed in the next section.

It is not easy to distinguish between cohesive devices, used by mature writers to relate adjoining sentences, and the indiscriminate use of pronouns. Compare the two extracts below, the first by Greene, the second by a 10-year-old child:

> The long tunnel under the parade was the noisiest, lowest, cheapest section of Brighton's amusements. Children rushed past them in paper sailor caps...

> He [the robot] first makes a wheel and axel fit then puts it through a hole in the wheel and then does the same with the second wheel. Fred puts it against a wooden wall and fits it on.

The difference is not simply one of ambiguity - in simpler constructions by immature writers the reader can clearly deduce what 'it' refers to - but of the process that led to the writer's use of pronoun. In the first case the writer chooses to link the two sentences by the anaphoric referent 'them', in the second she writes as if she were speaking to a person looking with her at the robot. She knows what 'it' stands for and appears not to realise that the reader may not share her knowledge.

Ellipsis (linking sentences by omitting repeated words) is a more reliable indicator of cohesion. Greene offers one clear example of ellipsis - 'All the way along the landward side of the tunnel were the amusements; on the other little shops' - where the word 'side' is

omitted from the final clause. Apposition, the coordination of syntactic structures, can also indicate a mature style. Greene's passage consists mainly of coordinated pairs of clauses, for example: 'The shelves rose to the ceiling; little doors let you in to the obscurity behind'. Anne's most successful sentence - 'I remembered the penny arcade, the children shouting, winning money, losing money' uses phrase coordination. Apposition is not always a reliable indicator; it cannot easily be distinguished from simple repetition: 'John went to the shops. He came back. He ate his dinner. He went to bed'. Anne's first sentence cannot be classed as either cogent apposition or plain repetition.

3.3. Section Level

At phrase and sentence level we have called on accepted grammatical terms - parts of speech, 'phrase', 'clause' - and structural devices - cohesion, ellipsis - to describe the linguistic features of writing. There is no such common currency at section level: linguists do not agree on how text units larger than a sentence should be represented and analysed. The two main competing methods are propositional analysis and story grammars.

In propositional analysis the text is broken down into a list of propositions, each containing a single predicator plus a small number of arguments. One proposition can serve as an argument in another, so propositional analysis can indicate text structure and coherence. An example of the method from an analysis by Kintsch et al. (1975, p.198) is given in figure 1.

```
1  (LOVE, GREEK, ART)
2     (BEAUTIFUL, ART)
3     (CONQUER, ROMAN, GREEK)
4     (COPY, ROMAN, GREEK)
5       (WHEN, 3, 4)
6       (LEARN, ROMAN, 8)
7       (CONSEQUENCE, 3, 6)
8       (CREATE, ROMAN, 2)

Arguments: GREEK, ART, ROMAN (3)
```

Text: The Greeks loved beautiful art. When the Romans conquered the Greeks, they copied them, and, thus, learned to create beautiful art. (21 words)

Figure 1. Propositional analysis of a sentence.

A story grammar is an extension of the context-free grammar to text level. Mandler and Johnson (1977, p.120) provide an analysis of stories for children in terms of such context-free rewrite rules. The first rule, for instance, is STORY -> SETTING + EVENT STRUCTURE. They use states and events as the terminal nodes in the grammar, with three types of relationship between the units, namely, AND, THEN and CAUSE. Figure 2 is a grammar representing the structure of a simple story.[2]

Both approaches have well-documented limitations (Black & Wilensky, 1979; Pugh, 1981). Neither are entirely appropriate for describing the writing of 11 year old children. We need a method that can be applied quickly and easily to the entire text. It should indicate clearly the structural complexity and coherence of the story, plus its major structural elements. Propositional analysis is elaborate and provides little or no indication of the high level

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[2]Reproduced from Pugh, 1981.

DOG STORY

1. It happened that a dog had got a piece of meat.
2. and was carrying it home in his mouth.
3. Now on his way home he had to cross a plank lying across a stream.
4. As he crossed he looked down
5. and saw his own shadow reflected in the water beneath.
6. Thinking that it was another dog with another piece of meat,
7. he made up his mind to have that also.
8. So he made a snap at the shadow,
9. but as he opened his mouth the piece of meat fell out,
10. dropped into the water,
11. and was never seen again.

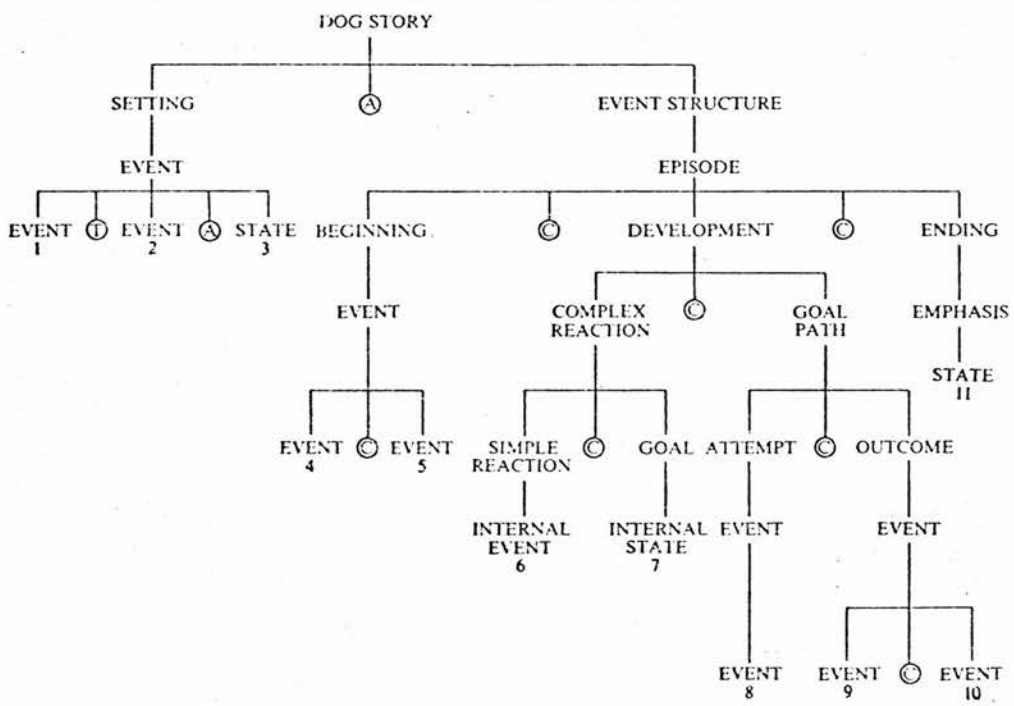

Figure 2. Story grammar analysis of a story. (The connections 'and', 'then' and 'cause' have been abbreviated to A, T, and C, and circled. The numbers under the terminal nodes refer to the surface statements of the story above).

functional/rhetorical elements, such as problem/solution or contrast. The categories of a story grammar can appear contrived (eg. 'complex reaction' or 'internal event') for even the simplest and most conventional of tales.

Instead, we use an associative network to represent the text structure. This incorporates some merits of both propositional analysis and story grammars and can represent well the fragmentary structure of some children's writing. Associative networks were introduced by Quillian to represent the conceptual relationships between English words (Quillian, 1966) and since then have become popular as a means of representing a wide variety of concepts, from geography (Carbonell, 1970) to linguistic case structure (Rumelhart, 1972). Dansereau (1978) has used associative networks to describe the structure of adult technical writing. Armbruster and Anderson (1981) have developed a similar technique, which they call 'mapping', to represent the structure of expository text. The maps have been used as part of an investigation of the comprehensibility of textbooks for children.

The network contains nodes, each of which represents, loosely, a proposition, but often with more arguments than those of, for example, Kintsch. The nodes are linked by arcs that indicate functional relations and a preliminary analysis of children's narrative writing suggests that at the lowest structural level a small set of regularly occurring connective arcs is sufficient, representing, for example, the relationships: 'implies'; 'detail'; 'then'. Armbruster and Anderson employ seven basic arcs in their representation of expository text - 'example'; 'property'; 'compare/contrast'; 'temporal'; 'causal'; 'enabling'; 'conditional' - plus negation and the logical connectives 'and', 'or', and 'but'. The networks below use a somewhat similar set of logical relations - 'detail'; 'compare'; 'contrast'; 'then'; 'implies'; 'cause'; 'result'; 'if/then' - with additional descriptive and temporal arcs:

'contains'; 'qualify'; 'what'; 'how'; 'where'; 'when'; 'prediction'.

A set of nodes can be grouped into a higher-level logical or rhetorical structure - for example: comparison; problem/solution - which acts as a single node in the network. On a still higher level some writing, such as fairy stories or research reports, conform to general frameworks which prescribe an ordering of concepts to represent stylistic devices, attributes of characters, or an order of events. We shall use the term script to signify a topic specific grouping - 'robbery' or 'search/escape', for example - and schema for a more general construct, such as 'problem/solution' that can appear in a range of story settings. Plot will be used as a general term, to encompass both 'script' and 'schema'.

The associative networks used here are neither an exhaustive nor a canonical representation of story structure. We would not expect two readers to produce identical networks. They do, however, accommodate both simple propositions and more complex schemas. They illustrate, through diagrams that are relatively simple to construct and interpret, the logical relationships, conceptual dependencies, narrative flow, and levels of description in text. They can be aids to both planning and interpretation of text.

Figure 3 shows a network representing the following two sentences, from an 11-year-old child's story:

> I was feeling very nervous. If I gave mayself up they'd kill me. I thought to myself, maybe they wern't looking I could sneak out side. I did just that thing. I ran out the door and over to my friend's house.

This short extract illustrates some aspects of the network analysis.

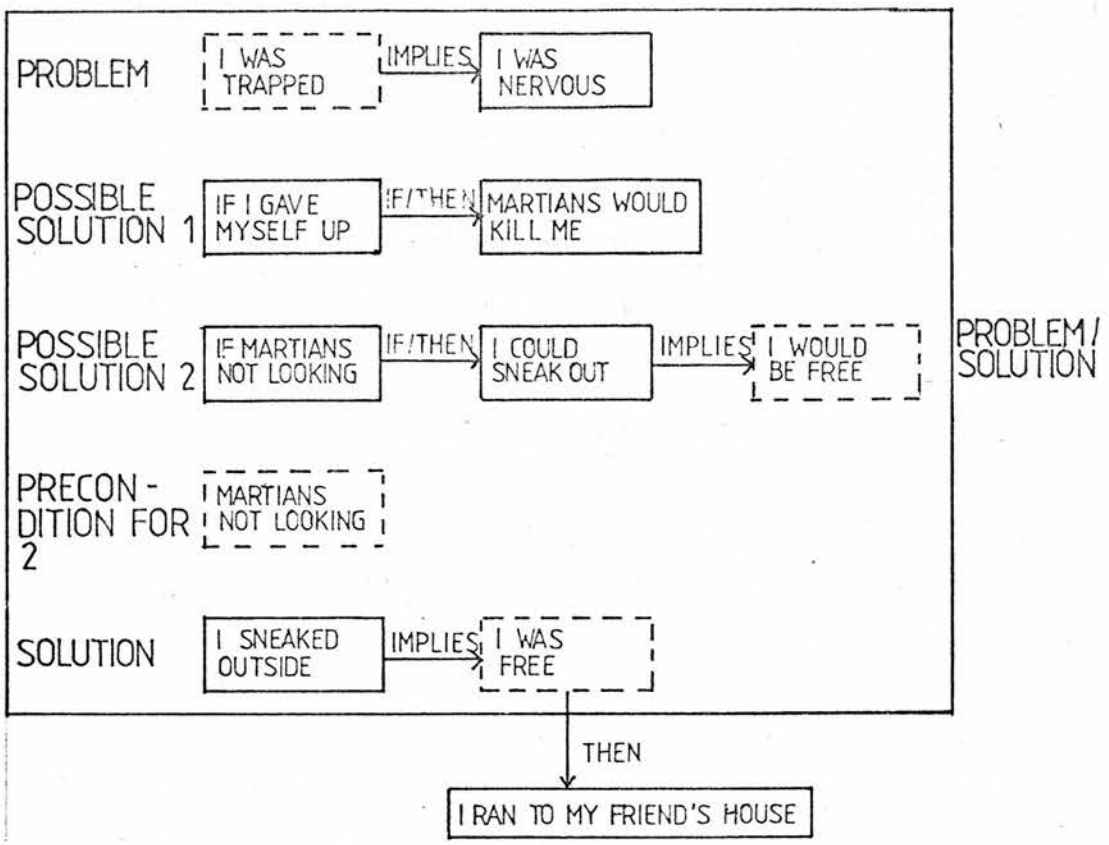

Figure 3. A network representation of part of a child's story.

The diagram contains small boxes, which represent the nodes, connected by labelled arrows, representing the arcs of the network. The large box, incorporating a set of nodes, is a problem/solution schema. The network need not represent every phrase in the text: tautologies and virtually contentless phrases, such as 'I thought to myself', can be left out without affecting the structural analysis. Conversely, elements that support the structure, but do not appear in the text, are included in the network. For example, 'martians not looking' is not stated explicitly, but appears to be the precondition for 'I ran out the door and over to my friend's house'. Such

interpolations are placed in broken boxes. Wherever possible, the flow of narrative time is indicated by downward arrows, and increasing levels of detail by right-pointing arrows.

Networks for the two sample passages are shown in figures 4 and 5. A difference in structure is evident from the layout of the

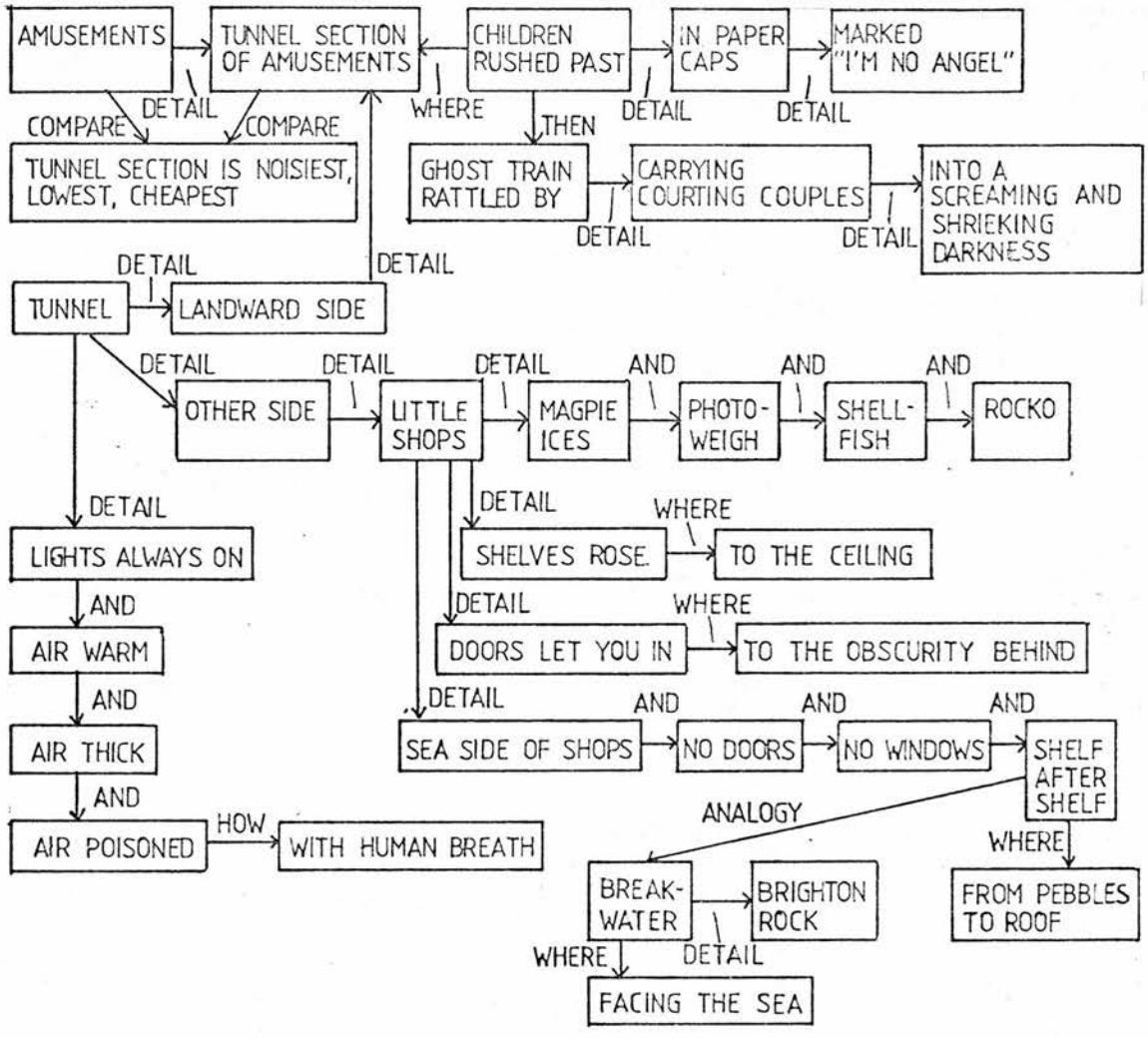

Figure 5. Network representation of the Graham Greene extract.

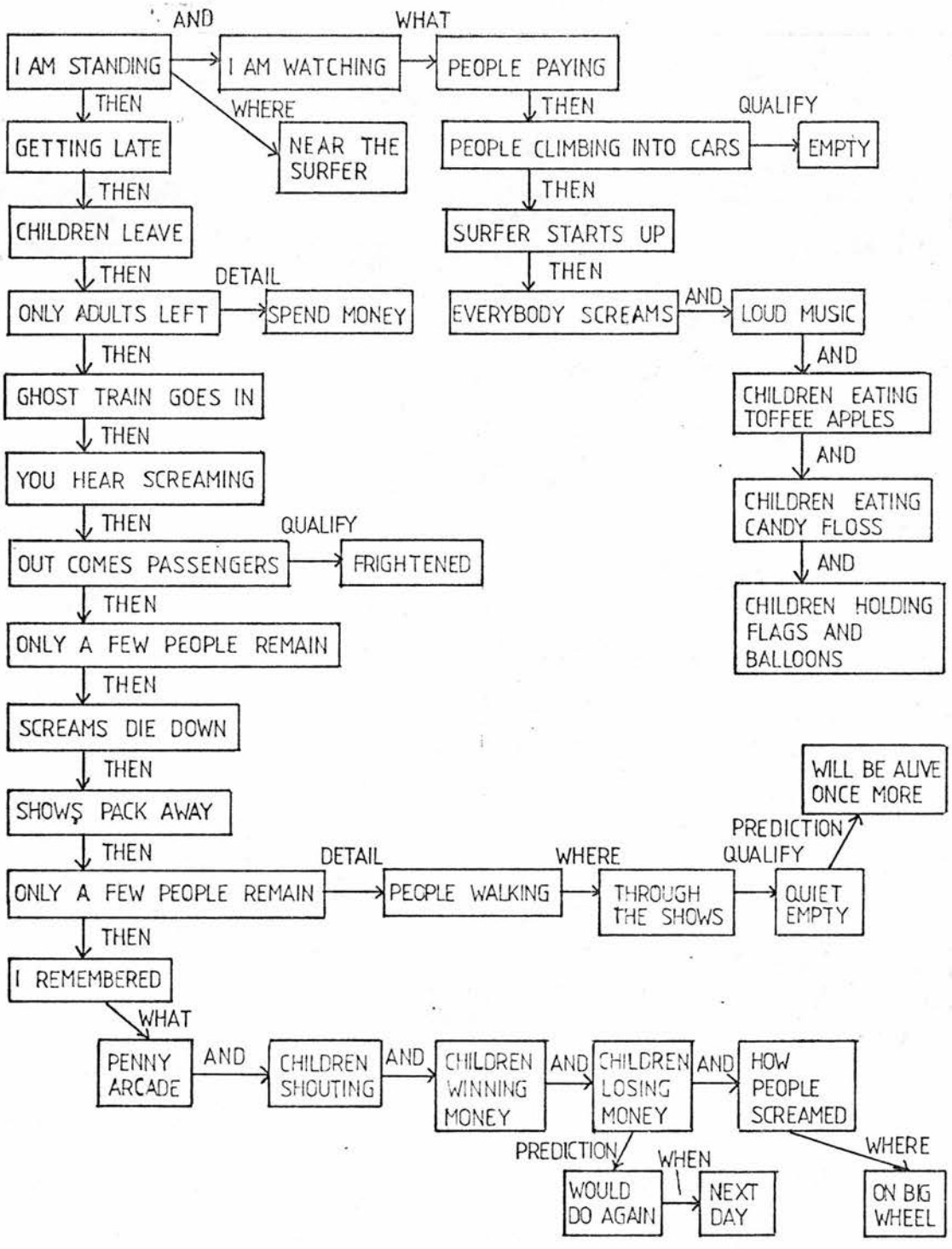

Figure 4. Network representation of part of Anne's story.

diagrams. Anne's extract has a core of simple narrative, a chain of events linked only by the passage of time. The first paragraph contains a description of simultaneous events, but at a single level of detail: the view from the 'Surfer'. Her final paragraph is structurally more complex, an indication of maturity reflected at sentence level both in the apposition 'winning money, losing money' noted earlier and in the complex sentence beginning 'I remembered'.

The network for Greene's passage shows no narrative, but instead a progressive focussing of detail from the tunnel down to the sticks of rock. If Brighton Rock is intended as a metaphor for the town, then the final phrase - 'poisoned with human breath' - is a figurative statement beyond the scope of this type of analysis.

For the less ambitious children's writing, the method is entirely adequate to show prominent structural features. A study of essays by children aged 10-11 indicates two regularly occurring text structures. The first (which we call a chain structure) consists of a chain of simple concepts - single events in a narrative passage; description at a single level of detail in descriptive writing - linked by a small range of sequential connective words or phrases such as 'next', 'then' and 'nearby'. Anne's sample contains both descriptive and narrative chain structures.

The passage below, an entire story by an 11-year-old child, has a very different construction:

> I was on a plane flight 504 to Spain when we stopped to re fuiel. Three men and a woman hi-jacked us and made the captain fly the plane to Egypt. We stayd at Cairo airport for six days we didn't have mach to eat beacause the hi-jackers were mean and nasty. At one time they held the captain at gun point he said he would kill him if they didnt

> get some petrol but the police said no. They shoit him and they said will you give us some petrol the said yes but how would you drive the plane. So they said some peopl for a captain they said the police said no we want twenty peopl I was one of the twenty that got free.

In just three sentences (beginning 'At one time') he weaves a tangled plot about negotiations amongst hijackers, police, and the captain of the aeroplane. The text is so compressed, almost telegraphic, and so many crucial elements of the plot are missing that any reconstruction must be speculative. Figure 6 shows an attempt to represent two of the sentences as a network, showing the negotiations as problem-solving schemas for the hijackers and their adversaries. This is an extreme example (over half the nodes in the network are not instantiated in the text) of an incomplete schema-directed structure, common in children's writing. It contains more schemas and logical connectives than a chain structure, but they are incomplete, missing premises or conclusions that are vital to the plot.

Another phenomenon of children's writing is an exponential increase in pace. A more bizarre example is given below. It is the final half of a 300 word story that begins in comparative torpor with the sinking of the Titanic:

> the next thing I woke in something like well I dont know what it was like but it was a U.F.O. . I was the only person alive the rest had had been killed by those monsters. they picked me up brought me through to a room produced their lazers and fired I dodged an picked up a lazer fired 2 times and killed them then I blew a hole in it and jumped I landed in the outdoor swimming pool in heathrow I was dregged out and taken to the police and put in custody but I was let go the nextday I went home to Edinburgh and live an old man then I was taken ill so I traveled to America to see a famous doctor but when I was cured I was travelling with president Nixon but the car I was in got blown up And I died in hospital.

Such narratives are generally accompanied by a chain story structure

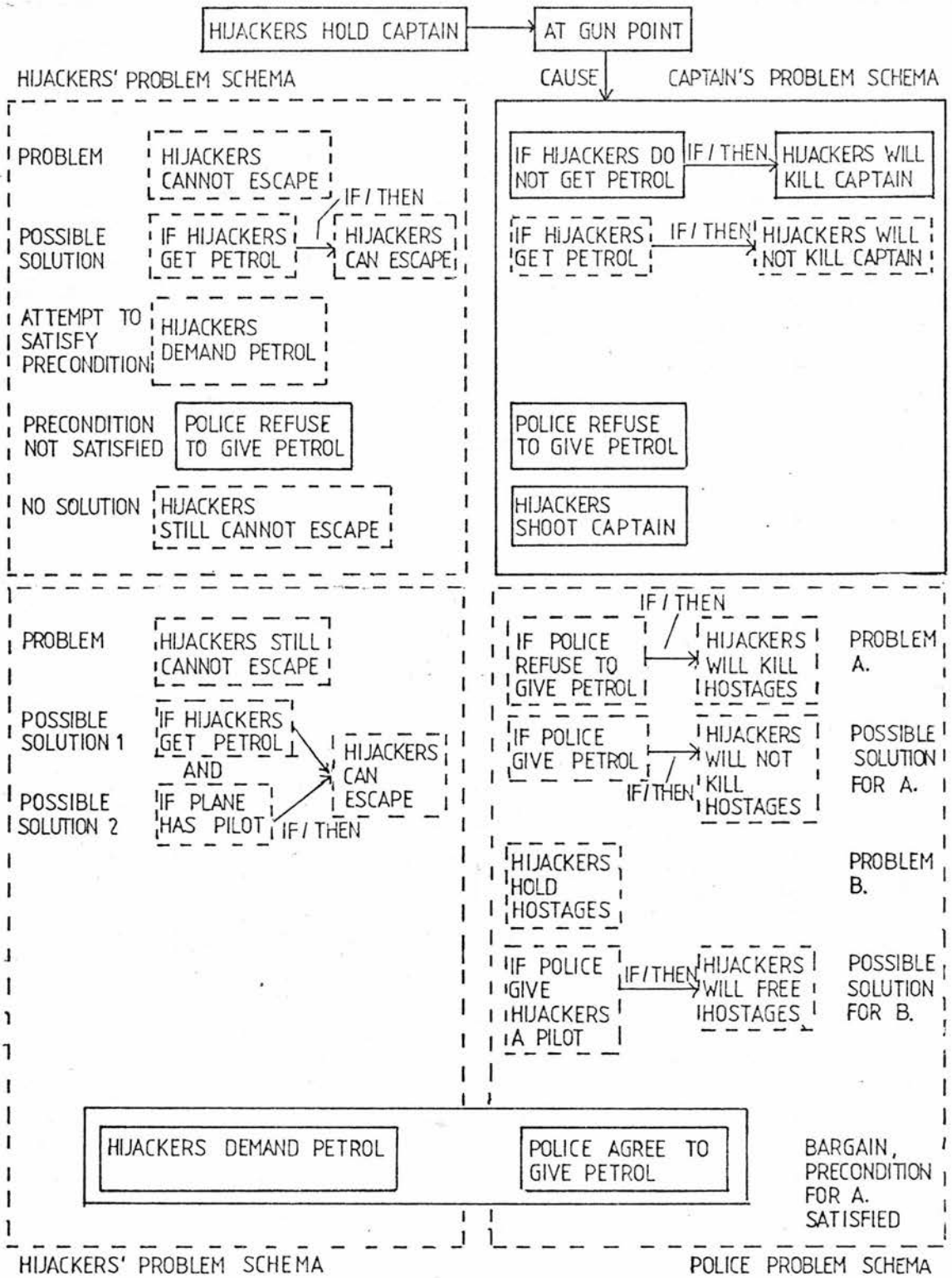

Figure 6. Network representation of part of the hijacker story.

and often end in a stock sentence, such as 'I woke up. It was all a dream'.

In mature writing there may be a core of narrative, but it can be broken through flashbacks and retrospection. Setting and characterisation flesh out the basic structure and sub-plots may provide parallel or embedded structures. The writer has command of rhetorical devices and alternative structures to the narrative and description. Collins and Gentner (1981) provide some examples: pyramid form (eg. a newspaper story, in which the first sentence summarises the entire text, and then successive sections fill in more detail); argument form (eg. introduction - background - definition of issues - statement of what is to be proven - arguments for and against the thesis - refutation of opposing arguments - summation); process of elimination form (an inverted pyramid where a writer makes an argument by successively eliminating alternatives). A mature writer may use immature features in certain circumstances, such as drafting or producing an 'expressive' piece of writing, but he is not limited to them. He has extended his linguistic range to cover other forms of language, forms that are mature, well structured, and can be varied to suit the task and audience.

Feature analysis has been successful in distinguishing between two sample passages, where quantitative syntactic and lexical indices failed. It correctly identified, at each of the text levels, the one written by an immature writer and indicated that the writer appeared to be at a stage of transition, producing both simple chain narrative and complex embedded clauses. To establish that the method is more widely applicable, we shall not look for further matched passages.

Instead, we shall show that the features result from the differing cognitive abilities and writing processes of children and adults.

4. THE PROCESS OF WRITING

Research studies of written language production (Murray, 1980; Flower & Hayes, 1981; Collins and Gentner, 1981; Britton, 1975) generally identify three stages in the writing process: planning; drafting; revising. Thus, a skilled writer first produces a plan, a complex network of concepts and relations. This network, either on paper or in her head, is then traversed, to produce a draft text, which is finally revised and polished. The process is more complex than suggested above, because the stages are not discrete, nor is there a simple progression from one stage to the next. The process of writing can be both iterative (an author may plan,draft, and revise section by section) and recursive (revising may entail another pass through the process, entailing further session of planning and drafting). To complicate matters further, a skilled author may revise plans, for example by reordering a list of topic headings, before embarking on a first draft. Thus, Britton subdivides the planning process into conception or gathering ideas and incubation, or sorting the ideas into a coherent plan.

Clearly, we require a more detailed explanation of the writing process than 'plan followed by draft followed by revise'. We propose a model of writing as the production and transformation of language structures at various text levels, subject to constraints.

4.1. Levels of Structure

We have already noted that a piece of text has embedded levels of structure, from the spelling of a word, to a plot that subsumes the entire text. Word, sentence, and section are the levels of hierarchy that seem to be most useful in explaining the process of writing.

A structure may act as a template that imposes organisation on the text, but does not specify a form of words. It is important to note that the lower the level of structure, the easier it is to instantiate or fill in the template. A writer can choose between possible sentence constructions, say between an active or a passive sentence, by mentally generating and comparing examples: "Which fits in better here, 'The brick hit him on the head' or 'He was hit on the head by a brick'?". The writer does not need to know the terms 'active' and 'passive', nor the syntactic structures they represent; he merely needs to generate and compare instances of the structures. Given the limitations of human working memory, a writer cannot mentally hold instances of higher level structures than a sentence, and so must either write out alternative versions, or compare uninstantiated structures. A writer of, for example, seafaring stories may chose between 'man overboard', 'caught in a storm' and 'attacked by pirates' scripts, without needing to write out each one in full.

We shall call an uninstantiated text structure, at any level, a plan, and any instantiation of a plan, a draft. Thus, the table of contents for a book constitutes a plan and versions of the text, including the final one which appears in print, are drafts. The

ability to create and compare plans is a hallmark of a good writer. We shall return to this later.

4.2. Constraints

The creation of a new structure, from a word to a plot, is subject to constraints, of two broad types: intrinsic and extrinsic (figure 7). Intrinsic constraints may be requirements for consistency (of style, character etc.) with parts already written, or they may result from higher-level plans that specify a certain combination of lower-level elements. For example, a plan for a research article may require 'abstract', 'research review', 'experiment', and 'result' elements. Extrinsic constraints come from the need to conform with the real world, creating credible characters, settings and events,and to satisfy the reader, writing in a suitable style for the expected audience.

4.3. Production

We suggest that there are two fundamental processes for creating new text forms (plans and drafts): 'generate and select' and

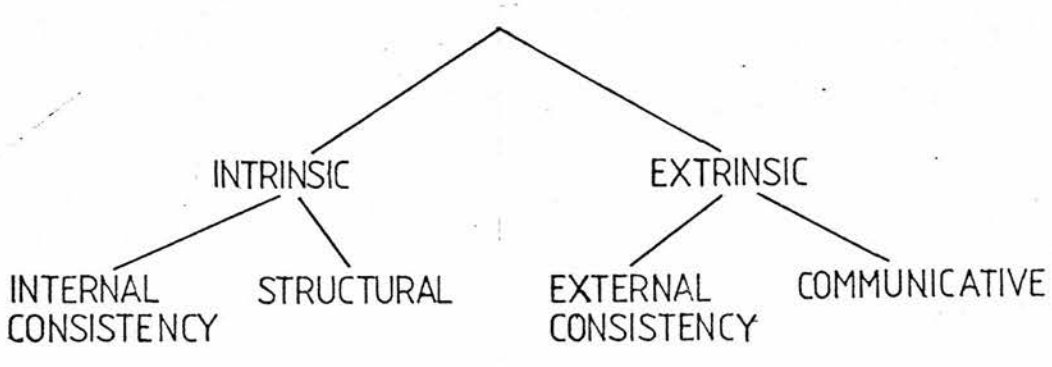

Figure 7. Constraints on text production.

'transform and select'. For generate and select, the writer:

(1) Generates one or more text forms to express a common concept, guided by the current constraints.

(2) Compares the text forms by their ability to satisfy the constraints.

(3) Selects the most suitable form, or forms.

This is the process used in drafting and also for the 'conception' stage of planning. It may be more or less deliberate, depending on the skill of the writer, the level and complexity of the text form and the number of alternatives. The process is made explicit in 'brainstorming', a method of idea generation in which the writer uses free association to produce a list of ideas related to a topic. He then looks over the list and picks those items most suited to the topic.

'Transform and select' is the process in operation during the 'revision' stage of writing and also at the 'incubation' phase of planning. A writer employs an operator to change one already-created text form to another. Collins and Gentner (1981) suggest some transformation operators that can be applied at various levels for expository writing:

Section

Put important ideas first.

Qualify an entire section, rather than each sentence.

Form a collection of elements into a list or table.

Sentence

Add connectives, such as 'therefore' and 'nevertheless', to clarify the relationship between elements.

Transform passive voice into active.

Break long sentences into shorter sentences, each containing one idea.

The most important operator, one that can be applied at any stage in writing, to any level of text, is deletion. Deletion not only removes irrelevant or less important material, it may also set off a further cycle of generate and select and transform and select, if the writer then replaces the deleted text.

Collins and Gentner present the transformation operators as uni-directional, representing improvements made by an experienced writer, but clearly some may be applied in either direction (in some contexts, for example, a sentence may be improved by a change from active to passive voice). A writer who applies an operator blindly, in all contexts, as if it were a universal rule of style, is denying herself the opportunity for critical evaluation. The important feature of the operators is that they generate alternative text forms for comparison. 'Transform and select' is a more deliberate process than 'generate and select'. A writer must become a critical reader, identifying the passages in need of change before applying the transformations and judging the result.

Analysing writing in terms of these two processes breaks down the conventional demarcation of plan-draft-revise. To plan a story, then write a draft and then revise the text is certainly one logical way to proceed. The plan provides a constraint framework to guide

drafting and reduce the number of possible text forms to be generated and compared. When a first draft is completed, the writer can then read critically over the entire text, picking out the passages for revision.

This is not the only way to good writing. We have already indicated that a writer may plan, draft, and revise one section before continuing with the next. This strategy is particularly useful when later episodes depend strongly on earlier details, as in a detective story. Alternatively, a writer may start by producing a key sentence that creates constraints on planning. Bereiter and Scardamalia (1982) report some improvements in children's writing when they are given a final sentence, such as 'And so, after considering the reasons for it and the reasons against it, the duke decided to rent his castle to the vampire after all, in spite of the rumour he had heard', and asked to create an appropriate story.

5. WRITING SKILLS

The analysis of composition as a constraint influenced cognitive process has implications for the acquisition and teaching of composition skills and for the diagnosis of writing problems. It offers plausible explanations of the cognitive processes which cause the linked and schema directed structures found in children's writing.

Young children have little conscious knowledge of their 'intuitive plots' which represent and determine text structure and so lack the ability of a skilled writer to create and revise plans. The child appears to adopt writing strategies based on simple heuristics

derived from conversation. One is the 'What next' strategy: to compose a short segment and then to reply to the mental equivalent of a conversational question ('What happened next?') by producing a link and another segment. It is not necessary that the child should consciously form a question after each segment, merely that the writing should continue as if the question were posed. A child cannot easily develop this strategy into a mature composing process for two reasons: firstly, because he finds it difficult to think about the structure of his text and so control it, and secondly because he is simultaneously both planning and writing individual sentences. Even if he recognises the need for higher level text structures, he may be not be able to produce them, because he is attempting to consider too many levels of structure and to satisfy too many constraints at once. Only when the child becomes able to plan without writing can he lessen the mental burden of composition.

The other writing strategy, resulting in a schema directed type of text structure, appears to be the child's attempt to produce a text with a plan that is too complex to be traversed by a 'What next' process. The child need not be fully aware of the logic and structure of the plan, which could merely have been provided by a personal experience or a TV programme, and it is just this lack of awareness which leads him to produce a tangled story structure. Again there is no simple development to mature composition. The child must first learn to view his language and schemas as entities that can be consciously shaped and revised. As Donaldson (1978b) points out:

> [a young child] is not much given to thinking about his thinking or his language, yet if he is to bring language under deliberate control he has to become more aware of them.

The reason why a child chooses one or other of the composing strategies (or indeed whether there are other distinct strategies) is unclear. It may be a consequence of the task (a child forms the plot of a TV programme into a schema directed story) or of the child's disposition (the two strategies show strong similarities to Pask's operation or comprehension learning strategies, which he has demonstrated to be characteristic of an individual over a range of tasks (Pask, 1976)).

The exponential increase in pace of a story is a peculiar phenomenon. In some cases it may result from a lack of time. The writer may have become increasingly aware that she could not complete the plot, at the same level of detail, in the time allowed. Another, contrary, explanation is that the writer finished a plot with time to spare and, feeling that more needed to be written and also that the story must end in a climax, tacked on further incidents of ever increasing pace. Both explanations indicate that the writer was not able to plan a text of measured pace to fit the time available.

The speech terms found in immature writing are another indication that children borrow conventions for writing from conversation, which is hardly surprising given that this is the only method of language production familiar to them. The other word and phrase level features - repetition; ambiguity from failure to substitute pronouns; unspecific words - are all consequences of the child's inability to decentre, to become a critical reader, detecting vague, ambiguous, or repetitious passages and making revisions that provide more information about the writer's experiences and intentions. The use of multiple modifiers by mature writers shows an

ability to combine conceptual classes.

At sentence level, the child does not appreciate the patterns in language and so makes no attempt to coordinate sentence structures. Similarly, cohesive devices demand an ability to abstract syntactic patterns and to delete or substitute repeated structures. To produce metaphor and rhetoric a child must see language as an object to be shaped and polished.

6. SUMMARY

In this chapter we have linked a child's cognitive development with his development of writing abilities. A child makes important advances in the awareness of his thought and language around the age of 10-12. Although the child is learning to control and extend his writing during this period there may be a levelling or a deterioration in the overall quality of his written work, as he experiments with new forms of language. Syntactic and lexical indices, which assume a smooth gradual development of writing abilities, may not detect particular text forms that mark a child's transition to rule knowledge of language.

We suggest that a feature analysis of a child's written work can indicate both his state of language understanding and also particular immature styles and structures that may need his attention. The impressionistic ratings of an adult reader are useful over longer periods, of perhaps a year or more, to show that a child has successfully assimilated new techniques and made a general improvement in writing style.

CHAPTER 3

THE TEACHING OF WRITING

The analysis of children's writing development in chapter two has direct implications for the teaching of creative writing. It suggests that a teaching scheme should first help a child to become aware of the language she uses and of the process of writing. Once a child has taken this major step in cognitive development, she can then be helped to build a repertoire of techniques to extend her writing style. This chapter describes the different approaches to teaching writing and assesses the criticisms levelled against them.

John Dixon, in 'Growth through English' (Dixon, 1975, pp.1-2) described three 'models or images of English that have been widely accepted in schools on both sides of the Atlantic'. The first stressed the skills of writing and 'fitted an era when initial literacy was the prime demand'. The second encouraged children to draw on the storehouse of culture and literature for their writing. The third approach provided children with opportunities to express their own experience and values through writing as a means to self discovery and 'personal growth' They express what different groups of educators have perceived to be the prime purpose of writing:

(1) To reproduce with accuracy prescribed text forms: one's own signature; the formal letter; the report; the precis; the criticism etc.

(2) To contribute to our cultural and literary heritage.

(3) To gain an understanding of oneself by expressing feelings, ideas and opinions in writing.

These are more ideological positions than theories of learning and, as such, they have been effective in alerting teachers to possible kinds of writing activity. However, they do tend to be mutually incompatible: lessons on Shakespeare's imagery and correct forms of address in business letters fit rather uneasily in a programme that encourages children to express needs and desires through creative writing. Schools have conventionally responded by placing each in a distinct compartment of the curriculum, hence the separate O-Level examinations in Language and Literature, but this ambivalence has provoked criticism from every ideological camp and led to calls for a unified approach to the teaching of English.

Since the early 1970's a further approach has been proposed and elaborated. This is concerned less with making value judgements about forms of writing and more with exploring the variety of language and the process of language creation. The approach fits with the analysis of children's writing development in the previous chapter and is the teaching method used for the computer-based writing project described later in the thesis.

The contribution of computer science to English teaching has, so far, been negligible. So few computer programs for creative writing and language arts have been evaluated, or even described in action, that any comprehensive survey would be little more than a catalogue of software. The teaching paradigms outlined above provide a convenient framework for a survey of computers and English teaching. Rather than compiling a list of programs we shall discuss styles of

software, describing a few representative programs and such computer-based learning projects as have been reported.

1. APPROACHES TO THE TEACHING OF WRITTEN ENGLISH

Despite the major changes in the teaching of English over the past 50 years, Britton and colleagues could still state in 1975:

> We found there were irreconcilable differences between the way writers work and the way many teachers and composition text books are constantly advising pupils to set about their tasks. (Britton et al., 1975, p.20).

The differences are due partly to the problems of putting educational research into practice. New approaches to English teaching have typically been brewed in research gatherings, such as the influential seminar on English teaching held in 1975 at Dartmouth, USA. The academic discussion has then diffused into teacher training colleges through books like Dixon's 'Growth through English' (Dixon, 1975) and Government reports, particularly the Bullock Report (1975). Finally, it has percolated through to individual teachers via textbooks and teaching schemes, much diluted in the process.

But there is another, perhaps more important, reason for the poor response of schools to new ideas in English teaching: the different textbooks present contradictory and incompatible approaches.

1.1. Formal Skills

From the Middle Ages to the late eighteenth century the teaching of writing meant little more than ensuring that a child could copy the letters of the alphabet and produce a signature. Then, with the

growing use of written language for communication and commerce, writing increased in importance, becoming one of the 'Three R's' of Victorian education:

> The content of writing instruction was little different to that of a century before: from simple mastery of a writing instrument to copy writing and then simple dictation. In the 1870's 'composition' made its first appearance as a subject, but only for children in Standard V upwards. This was in any case hardly as revolutionary a step as it might sound, since the pupils concerned were asked merely to write down from memory the substance of a story that had been read aloud to them. (Harpin, 1976, p.24)

Children were taught to imitate prescribed forms of writing, from the formal letter to the literary essay, and emphasis was placed on spelling, punctuation and standard syntax. Lessons were given in sentence analysis and construction, for example: 'Construct four sentences with subordinate adverbial clauses introduced by 'so that'; two to express purpose, and two to express result'.

A few schools still retain grammar exercises and a preoccupation with formal writing styles, but the main champions of the formal skills approach are now the manufacturers of computer software, who offer 'microcomputer learning laboratories' to 'teach your child the basics of English' in personal computing magazines. These are almost always 'drill and practise' programs that:

(1) Display a question.

(2) Match the student's answer against the expected response.

(3) Report success or failure.

(4) Adjust the student's score of correct answers.

(5) Repeat the process until the questions are exhausted or the student's score reaches a set limit.

The exercises may be dressed up as games but the principles are the same: either a student must detect errors in spelling, punctuation or syntax, or must produce a piece of text according to a given grammatical rule.

Grammar exercises of this type have been widely criticised, for employing an obsessively didactic and rigid teaching style, for being concerned with the detection of errors rather than creativity, for pulling language out of context, and for preserving an inappropriate Latinate grammar:

> Traditional school grammars are largely contradictory and frequently absurd. Therefore children who have had problems understanding grammar have had good reason. The grammar presented to them has been frequently not understandable (Corcoran, 1970, p.132)

Furthermore, monitoring studies have indicated no transfer of skills from grammar lessons to creative writing (Harris, 1965; Searles & Carlsen, 1960; Smith, Goodman & Meredith, 1970).

Criticism extends to the whole approach of teaching prescribed forms of writing, through exercises seperate from one another and from a context:

> Competence in language comes above all through its purposeful use, not through the working of exercises divorced from context. (Bullock, 1975, p.528)

Over the past forty years two movements have changed the way in which writing is taught in schools. The movements are complementary in their emphasis on the context of writing: children should be creating

stories not completing grammar exercises. They differ over the place of literature in English teaching.

1.2. Literary Appreciation

A group led by F.R. Leavis proposed a curriculum bound together by literature (Leavis & Thompson, 1933; Holbrook, 1961). Literature, they argued, offers a store of experience and knowledge that children could incorporate in their own speech and writing. As important, it preserves cultural values against what was perceived to be an attack from the philistines of mass communication:

> The case for literature is that it stands for humanity at a time when human values are not upheld...Among these values we number imagination, as well as the obviously acceptable ones like sympathy, understanding, and tolerance.[1]

It is difficult to see how computers might contribute to this approach, except by providing aids for writing and, possibly, access to literature. An intriguing suggestion, put forward at a recent conference of English teachers, is to store filmed performances of scenes from Shakespeare's plays on videodisk, along with the texts, annotations, and criticisms. A student would access the disk by computer and could watch, for example, renditions of Hamlet's soliloquy, with the spoken words displayed as subtitles on the screen. At any point the student could change to another performance of the speech. Or he could halt the film, refer to a glossary, or annotations on the text, or criticisms of the performance.

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[1]Denys Thompson's address to the 1965 Conference of N.C.T.E., quoted in Allen (1980, p.9).

Although Thompson intended the definition of 'literature' to be wide, embracing 'quite humble work that may have no pretension to permanent value', he faced charges that children were being fed narrow elitist values:

> [The 'cultural heritage' approach] gives no cognisance to the value of the pupil's own day to day, minute by minute experience, to the validity of their own world, to their own roles as unique persons, as creative entities. (Wilkinson et al., 1980, p.6)

1.3. 'Growth through English'

In 1966 teachers and academics gathered in Dartmouth, USA, to discuss the future of English teaching. From that Seminar came a new 'child-centred' approach to English teaching, promoted by Dixon in 'Growth through English' (Dixon, 1975). In this approach, a child's experiences provide the content and the rationale for writing. By using all forms of language - writing; conversation; drama - a child can express, and explore, his thoughts and feelings. The teacher should provide encouragement and stimulus for imaginative writing: a pebble; a poem; a computer program. A video game can inspire a story on 'aliens'; a database progam can provoke a discussion about privacy.

Harrison has devised a computer simulation program that encourages role-play (Harrison, 1983). Participants take on the roles of members of a town council and then debate the siting of a new factory. The computer displays a map of the town and accepts commands to build roads, bridges, and buildings, keeping a score of the costs and other consequences of each decision.

Other computer simulations that have been used a catalysts for discussion and writing include SLYFOX, a treasure-hunt game (Stewart, 1983) and Mission Impossible, one of many 'Adventure-type games' in which players explore an unknown territory by giving commands to the program (Chandler, 1982). Chandler has used Mission Impossible with small groups of children to inspire such language activities as code-breaking, map-making, role-play and crosswords:

> It would be no exaggeration to say that students find the game highly addictive, and the animated interaction that groups become involved in is always imaginative and cooperative. (p.81)

The 'Growth through English' approach has its own implicit set of values - the child's experience is of paramount importance and should be the focus for language activities - and from the outset it has met with criticism. Some critics lament the demotion of literature and the lack of moral guidance from teachers, who treat all forms of language as equally worthy of study. Others blame the teaching method of both the 'Growth through English' and 'literary appreciation' approach. While not denying the importance of imaginative creative writing, they believe it is insufficient as a means of improving skill in, for example, writing a report on the methods of local government, or providing a set of instructions on how to decarbonise a motorcycle (Thoulness, 1969). Even creative writing, they suggest, benefits from the learning of style and technique:

> Children reach a point where they need new techniques, having run through the satisfaction of their spontaneous performances. If the climate in one which is discouraging to such a concern there is inevitably stagnation. (Bullock, 1975, p.164)

A few teachers have seen this as a call to 'go back to basics', to

dust down the grammar books and resurrect dictation exercises. Fortunately, a new movement in English teaching offers a synthesis of imaginative personal writing and the development of language skills.

1.4. 'Language in Use'

Halliday and Britton led a move, in the late 1960's, to apply cognitive psychology and descriptive linguistics to a study of children's language. Britton and colleagues were mainly concerned with the writing process, the way in which a child represents meaning in language and communicates with the reader:

> When we write we are on our own. By premeditation we must arrive at the form of words which must thenceforward carry the whole of our meaning to an absent reader. What is the nature of the premeditative process by which we arrive finally at a delayed action utterance? What strategies does a writer need? (Britton et al., 1966, p.30)

Halliday's interest was the contribution of descriptive linguistics to English teaching. He argued that teaching which incorporated modern linguistic theory might be of real help in enabling children to develop their writing skills:

> The English teacher...if he is regarded as having any responsibility for the pupil's effective mastery of the language, needs to know his underlying discipline in the same way as does any other teacher, to at least the same extent; and the relevant underlying discipline is linguistics. (Halliday, 1967)

These two strands, an understanding of children's writing process and the theoretical framework of descriptive linguistics, were woven into the 'Language in Use' teaching scheme (Doughty, Pearce & Thornton, 1971):

> 'Language in Use' is concerned with the relationship between

> pupils and their language. This relationship has two major aspects: what pupils should know about the nature and function of language and how they can extend their command of their own language in both speaking and writing. The units aim to develop in pupils and students awareness of what language is and how it is used and, at the same time, to extend their competence in handling the language. (p.8-9)

The scheme promotes an 'ecological' approach to English teaching. Students examine language in a variety of contexts - a weather forecast, a newspaper advertisement, a police interview, etc. - to gain an understanding of its function and application. They are then asked to write their own examples of the language mode and register being studied. For example, they might write a newspaper article about an unusual hobby, or produce an episode of a radio play in regional dialect. The emphasis is on extending a child's range of language. Linguistics is brought in to describe the language possibilities, not prescribe particular forms.

When the scheme was published in 1971 it was received with some enthusiasm. The Bullock Report, the major government investigation of English teaching in school, devotes a page to 'Language in Use' and, while admitting the danger that 'unimaginatively used, the programme can become divorced from other aspects of English teaching' (Bullock, 1971, p.175), it concludes that:

> Mediated by a teacher who can turn practical suggestion into imaginative reality, work of this kind has a valuable contribution to make. (p.175)

Valuable though it is, 'Language in Use' has never gained wide acceptance in the classroom and in recent years has attracted criticism both for its approach and its structure. Bullock (p.175) reports a judgement of some teachers that 'Language in Use' 'does not

commit itself to fundamental values, that it remains a training in techniques', an echo of an address given by Inglis to the 1971 Conference of N.A.T.E. (Allen, 1980, p.57). Doughty and his colleagues never claim, however, to provide a course in literary appreciation, nor to develop a child's powers of taste and discrimination. Whether or not to teach cultural and literary values is still the subject of much debate. The authors have opted to avoid the issue by teaching language usage, leaving value judgements to the child and teacher.

Another, more pragmatic, limitation of 'Language in Use', one shared by other linguistics textbooks, is the lack of aids for language manipulation. In one section students are encouraged to examine errors caused by the misapplication of grammatical rules, for example:

> These shoes hurt my foots.
> She's taked my clothes.

The exercise would be much enhanced by a simple means of generating sentences to reveal a rule of grammar and its exceptions. Thus, a pupil might suggest a rule for past tense such as 'verb+ed' and be offered:

> She's mended my clothes.
> She's finded my clothes.
> She's sewed my clothes.
> She's washed my clothes. etc.

Another section asks the students to rewrite an article from a 'specialist' magazine without using technical language. Here they require a method of revising sections of text, without either producing a jumble of insertions and deletions or rewriting the

entire passage. A set of aids for language understanding and text manipulation would provide a test-bench for the experiments proposed in 'Language in Use'.

The two examples above indicate a need for two types of language aids: a system to model language, so that children could create and explore linguistic structures, and writing aids that can help a child to plan, compose, and revise text. Some computer programs of both types are described below. None has been evaluated with large groups of children, so any evidence of their value rests on formative evaluations, or on anecdotes and assertions by those who developed the programs.

1.4.1. Models of Language

A tenet of artificial intelligence research is that models can be valuable learning aids. A good way to understand the laws, constraints, and possibilities of a complex rule-governed system is to build models of the system, subject to the same rules, and then perform experiments on them. This methodology can be as useful in the school as in the research laboratory. Howe suggests that a child can learn to understand and control a complex mechanism through the problem solving process involved in constructing and testing models of the system (Howe, 1979):

> To promote real understanding of mechanisms, there is a need for a modelling system which allows a child to be creative. It should provide him with an opportunity to alter pre-determined models and even to create his very own models.

A child with a Meccano set, who builds a bridge, runs a toy car over it, notices that the bridge sags, and so strengthens it with a

triangular brace, is carrying out this process of building and testing models.

Computer-based modelling aids have been developed for a variety of school mathematics topics (du Boulay, 1978; Howe et al. 1979); composing tunes (Bamberger, 1972); orbital mechanics (diSessa, 1975); simple electrical circuits (Borning, 1979). Papert (1980) offers evidence that children who used the LOGO computer language to model simple geometry not only gained domain-specific knowledge, but also general problem-solving skills, such as 'decomposition' (breaking a difficult problem up into manageable sub-problems) and 'debugging' (coping with mismatches between planned and actual behaviour of the model) which could be applied to other subject areas. Gains in mathematical ability through modelling in LOGO have also been reported by Milner (1973), Howe and O'Shea (1978) and duBoulay (1978). The assertion that LOGO programming aids general problem solving has been challenged by Statz (1973) who records little improvement in children's problem solving abilities after a year of LOGO activities.

Over the past decade computer programs have been developed to model many aspects of language production and comprehension - generative grammars, parsers, translation systems, information retrieval systems - and some of these programs are now being adapted for use by children. They offer an environment in which children can create grammars, look for patterns in language, manipulate text systematically by applying rules of transformation, and explore the linguistic constraints of meaning and syntax. In the previous chapter we suggested that writing involves the creation and manipulation of

language structures at all levels, from the word to the section. A child needs to develop an understanding of language at each level and so the computer-based modelling aids will be described within this dimension, starting at word and phrase level.

Johns (1983) has devised two programs for word manipulation on the Sinclair ZX81 microcomputer: 'A/AN' and 'S-ENDING'. A/AN is a simple pattern recogniser that places the correct form of indefinite article before a noun phrase typed in by the user. If, for example, the user types 'uniformed person' it replies 'a uniformed person'; given 'uninformed person' it replies 'an uninformed person'. S-ENDING carries out a similar process for plurals. Both programs allow a child to infer the rules of word and phrase formation and so learn that language contains regular patterns.

A number of educational programs have been written to manipulate language at the sentence level. Iliad (Bates & Wilson, 1981) was developed by Bates and colleagues for a mainframe computer and reprogrammed in Pascal for the Apple microcomputer. It contains rules to generate many different transformations of a given sentence. For example, from the sentence 'John ate the apple' it can produce:

```
Did John eat the apple?
What did John eat?
Who ate the apple?
What did John do to the apple?
He ate it.
```

These rules are embedded in a tutorial program, aimed at deaf children who have difficulties in mastering such language forms as negation, question formation, and sentences containing complex verb phrases. The tutorials are presented as question and answer drills,

reminiscent of traditional grammar lessons, complete with cheerfully patronising replies to correct answers. In the extract below, the words typed by the student are underlined. When a student types a partly-correct reply, the program repeats the correct portion ('What did Jane' below). If the student still cannot work out the answer, he can type a '#' and the program will supply a further word ('What did Jane write').

1. The adults bought Mrs. Brown a dog.
Make a WH-question about the object.
> What did the adults buy Mrs. Brown?
A worthy effort, Lyn!

2. Jane wrote Andi a letter.
> hint
Type in a WH-question.
> What did Jane wrote Andi?
> What did Jane #
> What did Jane write Andi
I couldn't have done it better myself!

Stripped of its teaching component, Iliad is a powerful sentence generator based on a transformational grammar:

> The sentence generator possesses detailed knowledge of the syntactic structures of each sentence it produces. For example, it maintains a record of the part of speech (noun, verb, determiner etc.), it notes the tense of each clause, and it is capable of determining the grammatical relations born by different constituents; for example, which noun in a sentence is its subject, direct object, or indirect object. In transformational terms, Iliad produces phrase structure trees for both the deep and surface structures of each sentence. (Bates & Wilson, 1981, p.5-6)

The report on Iliad mentions a debugging environment for the program called the 'syntactic playground' in which the user can develop and test various components of the generator. It allows a system programmer or linguist to have complete control over all aspects of the generation process, testing syntactic hypotheses and exploring

the power of the language generator. If this 'syntactic playground' could be adapted for use by children, it would come far closer to the aims of 'Language in Use' than Iliad's restricted grammar drills.

An early example of language tools for children was a context-free grammar and pattern-matching parser, written in LOGO by Kahn (1975). The parser consists of LOGO procedures to match specified word patterns, with '$' standing for any series of words and '?' representing a variable. Thus, the pattern [$ NAME IS ?NAME $] will match word strings like 'I THINK YOUR NAME IS JOHN' or 'YOUR NAME IS ALEX, I BELIEVE' and output the word corresponding to ?NAME - 'John' or 'Alex' in the examples above. A child can specify syntax patterns to match different sentence structures.

With the context-free grammar procedures, a child can specify a grammar to the computer and then use it to generate sentences. Kahn reports a pilot project with a single child, aged 13, and concludes that the child 'seemed to pick up quickly the writing of generation rules and patterns for parsing' (Kahn, 1975, p.18).

Kahn's sentence generator is similar in design to the POEM programs, also written in LOGO (Sharples, 1978). They are the forerunners of the programs described in chapter five and were used by three boys, aged 15. The aim of the project was to provide the boys with the means to generate 'poems'. They began with POEM1, which generates random strings of words. They then classified the words according to part of speech and gave them as input to POEM2. This program generates word strings to follow a syntactic pattern. Given the pattern 'ARTICLE ADJECTIVE NOUN VERB ARTICLE NOUN' and the following vocabulary:

```
ARTICLE: 'a', 'the'
NOUN: 'mouse', 'cat', 'lion'
ADJECTIVE: 'big', 'tiny'
VERB: 'eats', 'devours'
```

it might generate 'a tiny cat devours the mouse' or 'a big lion eats the lion'. The children produced a number of syntax patterns, including one to generate a Christmas poem:

```
XMAS

THE PRESENT SPARKLES
THE SONG SHINES
HARK XMAS
AND THE HEAVENLY TREE GLOWS SWEETLY NEAR THE DECORATION
HARK THE GORGEOUS BELL.
```

The next program, POEM3, generates word strings that 'make sense'. The program must first be provided with a vocabulary. Each word in the vocabulary is given a part of speech and a set of 'meanings', which define its semantic features, for example: NEWWORDS "NOUN [SNOWBALL] [THING AIR MOVING]. A syntax pattern, as for POEM2, is then given to the program and it generates strings of words that are matched for meaning as well as ordered by the syntax pattern. The children created vocabularies and patterns for thematic poems, for example:

```
DRY PATH

LONELY MOON FADES SUBTLY
IN COLD PLAINS
BLACK CLOUDS
FROST FADES BY WISH

WE FEED SLOWLY

BLACK PATH FADES TO RED ROCKS
I FEED
```

Towards the end of the project the children were given tape-recorded

interviews. These indicate that the children were able to name parts of speech and discuss sentence structure. Just as important, they enjoyed the experience of creating computer poems and fulfilled their own objectives. At the start of the project, one of the children had remarked 'If the poems are good enough we could get them published in the school magazine'. They submitted the best of the poems produced during the project and three were accepted for publication.

The 'Storymaker' program allows a child to create and manipulate larger units of text than the sentence, in order to develop her skills of story planning. The program has been developed by Rubin (1980) and implemented in Basic for the Apple microcomputer. Alternative story structures are represented as a tree composed of nodes connected by branches. A node contains a story segment (a sentence or paragraph of text) and one or more branches may emanate from each node, representing alternative continuations of the text. A single path from the root node (the first sentence or paragraph of the story) to a leaf node (one of the many alternative last sentences or paragraphs) constitutes a complete story. A part of a story tree used by Storymaker is shown in figure 1.

The child first creates a story by chosing one branch at each node. As the child selects a branch the program adds the chosen segment of text to the story being constructed on the screen and displays the next set of alternative segments.

Rubin reports:

> Children who used the 'Storymaker' learned that their early choices had definite, sometimes surprising consequences. This fact made 'Storymaker' an excellent tool for demonstrating the structure and coherence of stories. (Zacchei,1982)

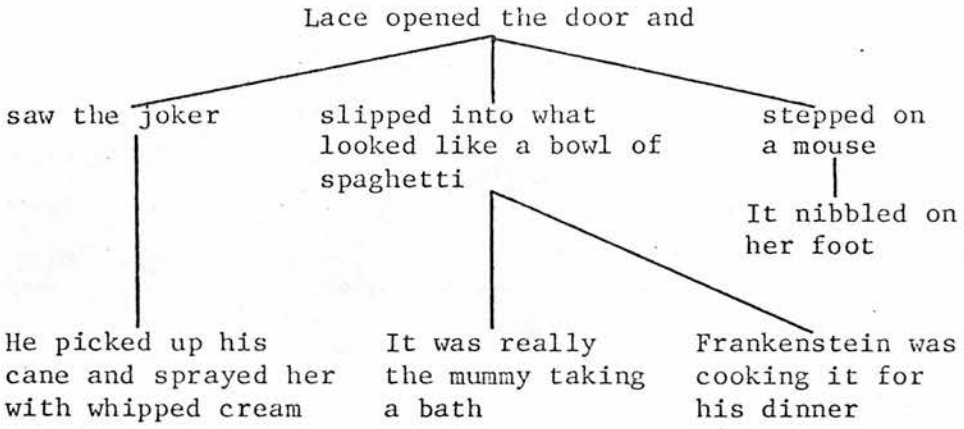

Figure 1. Part of a tree from the Storymaker program.

The child may either explore story pathways by making choices based on personal preference or work towards a goal generated by the program. This goal describes something that will occur during the story - an event, a character, a final outcome. If the child's version of the story does not match the expected version a response such as 'I'm sorry, but your story is not exactly the one I expected' is given.

A version of the program, called 'Storymaker Maker', allows a child to create and modify her own story structures. While exploring a story tree the child may choose, at any node, to create new branches and compose and type in segments to continue the story. Rubin suggests that the activity of exploring and creating alternative story structures develops skills which are difficult to exercise: problem solving and reasoning, evaluation and inference.

More significantly, the child uses these skills to extract

> meaning, applying knowledge about story structure and progression to a specific set of story segments. (Rubin, 1980)

It is important to note that in the Storymaker programs the content of the stories is not the main stimulus to learning; the child learns by understanding and manipulating the model (in this case story structures) represented in the program and by discussing her experiences with a teacher or peers.

1.4.2. Writing Aids

Storymaker-Maker is as much a writing aid as a language modelling program; it is a means for children to create and combine possible stories. Computer-based writing aids can offer assistance to a writer, or replace pen and paper as the writing medium. They range from simple word processors to tutorial systems giving advice on spelling punctuation, and style.

Most microcomputer manufacturers offer word processing packages as standard software. Some schools have made these available to students but, given the shortage of machines in schools, there is generally no possibility of providing a computer for each child. One school, Heaton school in Newcastle, has been fortunate in borrowing Microwriters for use in creative writing projects. The Microwriter is a small hand-held computer terminal with a 14 character display, a memory that holds four pages of A4 text, and limited word processing capabilities. It can be connected to a VDU for a full-screen display, or to a printer. In an imaginative creative writing project 27 children aged 13-14 were taken to an industrial museum and asked to record their impressions and ideas. They used the Microwriters as

notepads and then, back at school, they expanded and revised the notes into reports. (Clark, 1983)

Levin and colleagues at the University of California, San Diego have produced a program called the 'Writer's Assistant' (Levin, Boruta & Vasconcellos, 1982) in Pascal for the Apple microcomputer. It is based on the Pascal Text Editor, with additional commands that allow a child to check spelling, to experiment with word combinations and to merge sentences into a paragraph. The program has been tried out with children aged 9-10 who used it to create a classroom newspaper. They typed text to the computer, revised it by adding, deleting and rearranging words, phrases and lines of text and then printing out a final copy. The newspaper text file was structured into different sections (news, sports, TV reviews, cookbook, jokes etc) and the children worked on one issue of the newspaper per month.

Levin reports a preliminary evaluation, in which children in the experimental class and in a control class wrote on a topic using pencil and paper. The essays were written at the start and finish of a four month experimental period, during which time the experimental group children used the Writer's Assistant. Levin does not report the number of hours that this group spent at the computer, nor the comparative activities of the control group. The essays were analysed for length and overall quality (with organisation and adherence to topic emphasised) by a judge blind to the classroom from which the samples belonged. Levin reports significant increases in both measures for the experimental group and no overall increase for the control group.

The 'Writer's Workbench' is a growing collection of programs developed by Bell Labs for use with the UNIX operating system. They are designed to aid a writer in evaluating and modifying text:

> The programs that evaluate surface features [of text] check for possible spelling errors, consistency of usage and general punctuation errors. The more complex language analysis [programs] provide information on the overall readability of the text as well as sentence complexity... Passive sentences, which may add to the difficulty of reading a text, are highlighted by the program. Awkward or wordy phrases are indicated by another program that also provides alternative phrases for substitution. Other Writer's Workbench programs include a syllable counter, a simple reformatter that puts imperative sentences in a numbered list, and a program that assigns a part of speech to each word in a sentence. (Frase, 1980).

A similar system is EPISTLE, developed at IBM (Miller, Heidorn & Jensen, 1981), which detects several classes of grammatical error in a text, for example disagreement in number between the subject and verb.

Although the Writer's Workbench and EPISTLE make disputable judgements about grammar and style a writer retains control over the text and makes the decisions on whether to accept or reject the changes. Programs that interrupt a writer to offer spelling corrections or advice on style may pass over the line between helpful assistance and unwarranted intervention. Where this line is drawn depends on the type and quality of advice, the nature of the task, and the proficiency of the writer. An adaptive writing aid might contain representational models of the writer and text which it could consult to decide whether or not to interrupt the writer with advice. No such system has yet been implemented, but the two programs described below were designed to provide information about different levels of intervention.

The CAC program has been designed by Woodruff et al. (1981) and implemented in Basic on a 32K Commodore PET microcomputer. The program operates at the sentence/paragraph level and offers children advice on composing persuasive text. It uses a technique the authors call 'procedural facilitation' in which a child is helped to make better use of her latent knowledge by having a computer program (or trained adult) lessen the executive burden of mental tasks, so freeing the child to carry out kinds of information processing that would normally exceed her capabilities.

The child begins a session with CAC by typing text into the computer, with the program acting as a simple word processor. If, however, the child presses a 'help' key, or the the terminal is inactive for more than 20 seconds, then the program prompts: 'May I help you?'. When the answer is 'yes' it presents a help menu and the child can choose to take advice on, for example, 'following an argument plan' or 'producing the next sentence'. The guidance offered by CAC is based on the text most recently composed by the child. If a child asks for advice on producing the next sentence then the program searches the last complete sentence for a keyword such as 'believe', 'reason' or 'example'. On finding the word 'reason', for example, the computer would print 'Let's say more about your reasons so the reader will understand'. The prompt is determined by the first keyword found.

The program will not interfere by offering help unless requested by the child, and the authors report that children (grade six elementary school) were 'willing and able to work interactively with the computer while composing and enjoyed the experience'. Essays

produced with the aid of the computer, however, were not significantly different, when rated for overall quality, from those written with pencil and paper.

A second program CAC2 was designed, which provides more active intervention, presenting a question such as 'Do you have an opinion on this topic?' or 'Have you mentioned any facts to support you reason' after each sentence typed by the child. Each question is determined by the child's response to previous questions and they are intended to emulate those an expert writer might ask himself while composing.

Thirty-six children (grade 8) were set a persuasive writing topic and assigned to one of three groups. The first group wrote using pencil and paper, the second composed with the CAC2 program and the third used CACB, a program that acted simply as a typewriter, with no prompts or advice.

The essays were rated on an 8 point scale for persuasiveness and clarity of argument and the authors report that 'overall CAC2 papers were given lower rates than CACB papers'. When the children were asked to rank, from hardest to easiest, the difficulty of condition to write under, the pencil and paper was ranked as hardest, CACB as the second and CAC2 as the easiest. The authors offer an explanation (based on further questioning of the children) that:

> the program was having an effect on students' choices of what to say...The program may have been setting in motion a new composing strategy - a more sophisticated strategy, but one which students could not use to their advantage at the first attempt.

The authors are undecided about the best level of computer

intervention and suggest two strategies for investigation: to develop more powerful techniques of procedural facilitation and to allow children to control the amount of computer assistance, or to develop more sophisticated response-sensitive questions and allow the computer to guide the learner from the beginning to the end of the composing process.

2. TEACHING SCHEME

Computer-based aids for writing and language exploration can fill a gap in the 'Language in Use' approach to English teaching, providing children with the means to explore and manipulate language. A lack of tools is not the only limitation of 'Language in Use'. It also 'lacks any real structure to the teacher unversed in linguistic knowledge' (Brown, 1975). It is designed as a broad teacher's guide, rather than a textbook and 'a number of teachers have expressed perplexity as to how 'Language in Use' should be used. Part of the difficulty is...the fruitless search for teacher-proof material' (Muir, 1975). A teacher-proof scheme must provide more explanation and guidance than 'Language in Use' while still leaving room for interpretation.

The next chapter describes a teaching scheme for language understanding and creative writing that retains the approach of 'Language in Use' while providing structured teaching material that can be used directly by children, or presented by an adult with no training in linguistics.

CHAPTER 4

TEACHING SCHEME

In this chapter we describe a teaching scheme for language exploration and creative writing that follows the aims of 'Language in Use': to extend a child's range of language, so that she is able to write imaginatively in a style that is suited to function and audience. The scheme goes beyond 'Language in Use' in providing the child with computer-based language activities and writing aids.

1. PROJECT SCHEME

The teaching scheme is presented in two parts. In the first part, a child starts to acquire an explicit rule knowledge of language. He builds up an active vocabulary of linguistic terms and is offered concrete representations of abstract language concepts. For example, 'vocabulary' is introduced to the child as a box containing words; 'parts of speech' as a set of smaller boxes, each a different colour, containing words sorted by their position and function in a sentence; 'syntax' as the pattern of words, coloured according to part of speech, in a sentence. The emphasis is on generating rather than analysing text and grammar is presented as a system for creating interesting and amusing types of sentence.

The child also explores the basic processes of writing, through a series of games and exercises for generating and transforming text. In each of these he creates, compares, and choses language, so as to produce a silly story or to complete a 'sentence crossword' for example.

In the second part of the scheme a child applies this knowledge of language to creative writing. He follows a path up through the levels of text from sentence to story, by creating simple descriptions, linking them together into a descriptive environment, and then forming this into a narrative essay. Along the way, guided writing activities enable him to:

(1) discover and employ new words, sentence structures, scripts and schemas.

(2) generate and transform language at all text levels.

(3) gain a clearer understanding of the audience and function of her writing and use this understanding to select appropriate forms of language.

Given the limitations of the project, the scheme is limited to teaching narrative and descriptive writing, for a single audience, the child's classmates. The first part of the scheme, however, provides a general preparation for creative writing and the second part could be extended to cover other forms of writing.

Written worksheets provide core teaching material, games, exercises, and assessment questions. All the information needed to carry out an activity, including operation of the computer, is contained in these sheets, so they provide a self-teaching package that allows each child to progress at an individual pace.

Each worksheet introduces a new topic. It begins with a resumé of the concept or skill and examples of its use. This is followed by a set of activities whereby the the child can assimilate the concept

or practise the skill. The early activities are carefully defined but, as the child becomes more adept, so the support is withdrawn, allowing him to discover new contexts or applications for his knowledge.

The worksheets are laid out in a consistent format. 'Prestige Elite' typeface is used to present information, with italics for examples and illustrations. Tasks and assignment questions are in 'OCR2' type and enclosed in boxes for highlight. These are the only sections in which a child is required to write on the sheet. Prompts and other text that would be output by the computer are in 'Courier' typeface, with italics to indicate text which should be typed by the user. Any comments which are not part of the computer dialogue (such as 'press the green button') are handwritten. Finally handwritten 'thought bubbles' offer brief summaries and aphorisms, indicating important concepts for reference or revision.

The table below provides a precis of the worksheets used in the investigation.

TOPIC/TITLE	CONTENTS	TASK
Words in Strange Ways	Form words into sequences.	Generate word strings by picking words, at random, from a box. Generate random word strings using the PAT1 program.
Words in order	Generate text from syntactic patterns.	Sort words into boxes according to part of speech. Specify sentence patterns to guide selection of words from boxes. Grammar crossword.

Poems from PAT2	Generate text using the PAT2 program.	Create 'word boxes' for PATR2, then specify patterns to generate text.
Save and Recall	Save and recall 'word boxes' using PAT2.	Understand the 'save' and 'recall' commands. Use 'word boxes' stored in the 'dictionary' memory.
Silly Stories	Specify patterns to generate stories.	Use prewritten sentence patterns to generate stories. Generate stories by creating patterns.
In Other Words	Improve style by word substitution.	A story is given with a choice of possible words. Select the most appropriate words. Use the PAT2 program to carry out the same process.
Word Pictures	Descriptive words.	Understand the importance of adjectival and adverbial modifiers in descriptive writing. Extend sentences to improve the description.
Using Walter	Introduction to the WALTER program.	Type in text to WALTER and make simple alterations.
Thesaurus	Use of a thesaurus.	Use the on-line thesaurus to generate synonyms. Revise text by word substitution.
Lazy Words	Vagueness in writing.	Understand the problems of comprehending imprecise text. Improve imprecise sections of text.

Table 1. Precis of the worksheets.

The worksheets form the outline of a teaching scheme, but some detail is omitted. The creative writing projects were deliberately not specified, so as to leave the scheme open to the interests of the individual children. Other activities, particularly the non-computer

games, were introduced verbally to the children in the project, but could be included in a revised set of worksheets. They are described in the account of the project in chapter seven.

Lastly, the scheme is designed to be enjoyable. The activities either have clearly defined, stimulating goals, such as commanding a computer to write silly stories, or are presented as games, generally with the child trying to 'outwit' the computer.

CHAPTER 5

COMPUTER PROGRAMS

Computer programs are integral components of the teaching scheme, providing aids for writing and the means to build and explore representations of language. The first three programs, PAT1-PAT3, are a series of text generators with increasing constraints, which lead the child into an exploration of the structure and function of language. By specifying first an appropriate vocabulary, then syntactic structure, and then agreement of meaning, the child can use the computer to generate interesting and increasingly refined sentences and poems.

The WALTER program is a general purpose text transformer, which a child may use to create and modify text. The child may either write simple rules for text revision or may call on a library of prewritten rules to carry out more complex syntactic transformations. An automated thesaurus is available within WALTER to offer suggestions for word substitution. The final program, FANTASY, is a simulation game based on an associative network of written descriptions.

The programs are written in POP-2, a list-processing language developed at Edinburgh University (Burstall, Collins & Popplestone, 1971) and 'C', the systems language for the UNIX operating system, from Bell Labs (Kernighan & Ritchie, 1978).

1. HUMAN FACTORS

The programs are designed to be user-friendly and simple enough in concept to be used by children who have had no previous

programming experience. Principles for the design of software for novice users have been given by duBoulay et al. (1981), Gaines and Facey (1975), Cheriton (1976), and Sharples (1983). The latter suggests that a well-designed program should have:

Simple start-up.
Simple basic operation.
Changes of state indicated.
Simple error reporting and recovery.
Consistency.
Clear conceptual model.
Familiar operations performed in familiar ways.
On-line help.

The language programs satisfy all but the last of these criteria.

1.1. Simple Start-up

The POP-2 programs are invoked by two commands at the system level:

POP2 <name of program>

START

The program then either gives the command-level prompt:

W: <'waiting'>

or, in the case of PAT2 and WALTER, the program issues the prompt:

WHO ARE YOU:

to record the user's name, followed by the command prompt. The FANTASY program is invoked by the system-level command:

FANTASY

followed by the name of the fantasy environment. The thesaurus can be called from inside PAT2 or WALTER by typing:

thesaurus

at the 'W:' command.

1.2. Simple Basic Operation

All the programs are driven by single word commands. Only two commands are needed for the basic operation of the PAT and WALTER programs ('put' and 'get' in the case of the PAT programs; 'new' and 'change' for WALTER). The few other commands, for saving and recalling data from file, can be learned when needed. Input of data to the programs is guided by prompts, for example 'PART OF SPEECH:' and the programs accept character strings representing English words[1] so the user need spend very little training time before applying the program to a useful task.

1.3. Changes of State Indicated

Each program can be in one of a number of states. PAT2, for example, has a PUT state to create grammar rules, a GET state to generate text and other states for file manipulation. These are signalled by a change of prompt. On return to the command level a FINISHED message (e.g. 'RECALL FINISHED') is printed and the 'W:' prompt is reissued. The FANTASY program indicates a change of state, a movement from one location to another, by printing a description of the new location.

1.4. Simple Error Reporting and Recovery

PAT2 and WALTER report errors in a simple consistent format, by printing 'OOPS-' and then a description of the error, for example:

---

[1] The WALTER and PAT programs accept words containing a single quote (e.g. don't) a hyphen (e.g. see-saw) and digits (e.g. A2). All other symbols are accepted as special characters. A word consists of a series of ordinary characters, followed by one or more spaces, or a single special character.

OOPS - YOU MUST ONLY TYPE A SINGLE WORD FOR A PART OF SPEECH.
TRY AGAIN.

Following an error the program reissues the prompt to allow the user another attempt. If the FANTASY program is unable to interpret a command it issues a comprehensible error message, such as 'No exit that way', and then waits for a further command.

1.5. Consistent

The PAT and WALTER programs were designed to provide consistent prompts and responses: for example, the command level in all programs is signalled by a 'W:' prompt. FANTASY is an adaption of a pre-existing C program and differs slightly in providing no command prompts, but its basic operation, a command interpreter, is similar to PAT and WALTER and the children found no difficulty in transferring between programs.

1.6. Clear Conceptual Model

It was important to the experiment that the children were not only able to operate the programs, but also to understand them as representations of linguistic processes. The PAT programs represent a series of generative grammers and their operation could be described and simulated without the computer, using slips of paper and boxes. For example, in order to understand the PAT1 program, a child writes words on blank slips of paper - one word per slip - and puts them into an empty 'word box'. He then draws the slips out, blindfold, one by one and copies the words down onto paper. He can then carry out the same process with the computer, using the 'put' and 'get' commands. During the experiment the children did not begin to use a

program until they had performed, and understood, the process using slips of paper.

The WALTER program performs the same kind of actions as a child writing and revising with a pencil, paper and eraser, with the addition of 'transformation rules' which act like a teacher making systematic revisions to the text. The structure and operation of FANTASY can be described very simply by drawing a map of the 'fantasy world' and then 'exploring' it by moving a counter from one location to the next.

1.7. Familiar Operations Performed in Familiar Ways

Some users of the WALTER program will already be familiar with operating a typewriter and so the program allows them to type text into the machine as they would on a typewriter, with no special conventions of punctuation or layout.

1.8. On-line Help

None of the current versions of the programs provide help messages - the author was generally available to offer advice to the children - but their modular design is such that procedures to generate context-specific help messages could be added without great difficulty.

2. PAT PROGRAMS

The PAT programs can be likened to a child's engineering construction kit, such as Meccano. The child starts by following construction plans, or by building his own simple and unwieldy structures from a small set of parts. Then, as he learns about the

properties of the parts and the constraints of the system, he can create more sophisticated models. Finally, he can combine the simple parts into sub-assemblies (with Meccano, a pulley system or trolley, with PAT a phrase or sentence) which can then be used as the building units for complex and realistic structures. For each program, the overall structure will be described first, followed by the user dialogue and then details of the implementation.

2.1. PAT1: Structure and Presentation to the User

PAT1 is a random word generator. The user can create a vocabulary and then generate strings of words, which the program chooses, at random, from the vocabulary. The three commands are:

put: to place words in the vocabulary.

get: to generate word strings.

clear: to clear the vocabulary.

2.2. PAT1: User Dialogue

The user's responses in the following dialogue are underlined and comments are enclosed in angle brackets.

W: put <add words to the vocabulary>

WORDS: the love birds my fly free moving

PUT FINISHED

W: get

NUMBER OF WORDS IN A LINE: 3

NUMBER OF LINES: 4

```
**********************************************************************

birds love my
love moving love
birds the fly
free birds the

**********************************************************************
```

2.3. PAT2: Structure

PAT2 is an implementation of a context-free generative grammar. The grammar contains rewrite rules for the generation of terminal strings (generally English words) from non-terminal symbols (parts of speech, for example). Thus, the rule:

```
noun -> cat/dog/hen
```

can be read as 'the non-terminal symbol 'noun' can be rewritten as the string 'cat', or 'dog', or 'hen''. A grammar can be built up by including non-terminal strings on the right hand side of a rule, e.g.:

```
sentence -> nounphrase verb nounphrase/nounphrase verb
nounphrase -> the adjective noun/the noun
adjective -> big/tiny/huge
noun -> cat/dog/hen/man/woman
verb -> likes/sees/eats
```

The start symbol 'sentence' is replaced by one of the strings on the right hand side of the rule. This string is then scanned and any non-terminal symbol is replaced by one string, chosen at random, from the right hand side of the rule. The scanning continues until a string consisting entirely of terminal symbols is produced. The grammar above would generate sentences such as:

```
the huge hen eats the dog
```

or

the tiny man sees

A context-free grammar is not restricted to generating English words; one can just as easily be written to produce French phrases, arithmetic expressions, or random computer programs.

2.4. PAT2: Presentation to the User

The program is presented as a means of generating strings of words from parts of speech. The user is given two main commands, 'put' and 'get'. With 'put' she can add words to 'part of speech boxes' and then with 'get' she can specify a 'pattern' of words, which may contain parts of speech.

If a user wishes to generate random nounphrases, such as 'the big hen' or 'a flea' then she first gives the 'put' command to create grammar rules, for example:

```
W: put

PART OF SPEECH: noun
WORDS: hen/water buffalo/iguana/flea

PART OF SPEECH: adjective
WORDS: big/small/exotic/dangerous

PART OF SPEECH: verb
WORDS: eats/sees/annoys

PART OF SPEECH:      <the user presses 'return' to finish>

W:

PUT FINISHED
```

This is equivalent to specifying the grammar rules:

noun -> hen/water buffalo/iguana/flea

```
adjective -> big/small/exotic/dangerous
verb -> eats/sees/annoys
```

Then, using the 'get' command, she writes out a pattern for a nounphrase, such as 'the adjective noun' and the program generates a nounphrase choosing, at random, a word from the 'noun box' and the 'adjective box':

```
W: get

PATTERN: The adjective noun.
PATTERN:                          <'Return' to finish>

**********************************************************************

The exotic water buffalo.

**********************************************************************

W:
```

For each call of 'get' with pattern 'the adjective noun' the program generates a new nounphrase.

```
W: get

PATTERN: The adjective noun. The adjective noun.
PATTERN:

**********************************************************************

The big flea. The dangerous hen.

**********************************************************************

W:
```

The user might then create a box named 'nounphrase', with contents 'a adjective noun' and 'the noun', and then call 'get' with the pattern 'nounphrase eats nounphrase.' to generate random sentences:

```
W: put

PART OF SPEECH: nounphrase
```

```
WORDS: the adjective noun/ the noun

PART OF SPEECH:

PUT FINISHED

W: get

PATTERN: nounphrase eats nounphrase.
PATTERN:

**********************************************************************

The small iguana eats the water buffalo.[2]

**********************************************************************

W:
```

Two further rules can be defined to produce a series of sentences. The '^' symbol appearing in a pattern causes a new line to be taken in the generated text. A suffix can be added to a terminal or non-terminal in the pattern with a '+' sign: 'noun+s', for example. The word and suffix are not concatenated until a terminal is generated (otherwise the word 'nouns' would be produced). Similarly a suffix can be removed from a word in the pattern with the '_' sign. Thus, in the example below, the pattern 'nounphrase+s verb_s nounphrase' first generates a plural nounphrase (with an 's' added to the final word, e.g. 'The big water buffalos') followed by a singular verb (with the final 's' removed, e.g. 'annoy') followed by a normal, singular, nounphrase (e.g. 'the exotic water buffalo'). The start pattern is 'A menagerie.^^animals'. This generates the words 'A menagerie' followed by the 'animals'. The non-terminal 'animals' is the left-hand side of a recursive rule, which either generates the

---

[2] Capital letters are ignored for words in the 'pattern'. The first word generated by 'get' is capitalised, as are words following a fullstop.

non-terminal 'sentence', followed by a new line, or it generates 'sentence', followed by a new line, followed by 'animals'. Thus, 'animals' generates one or more sentences, each on a new line.

```
W: put

PART OF SPEECH: sentence
WORDS:
nounphrase verb nounphrase/nounphrase+s verb_s nounphrase

PART OF SPEECH: animals
WORDS:
sentence.^/sentence.^animals/sentence.^sentence.^animals

PART OF SPEECH:

PUT FINISHED

W: get

PATTERN: A menagerie.^^animals
PATTERN:

**********************************************************************

A menagerie.

The tiny hen sees the flea.
The big water buffalos annoy the exotic water buffalo.
The flea eats the small iguana.

**********************************************************************

W:
```

The user may transfer rules to and from 'memory' files, in order to save them for a later session. Each user has a separate set of memories and may also access rules stored in a 'library' shared with other users. In the dialogue below, a user saves the rules in a memory file and then recalls a set of rules to generate a poem from the library file:

```
W: remove

PART OF SPEECH TO BE REMOVED: all
                          <Remove all the parts of speech.  To
```

remove one part of speech only, the user would type its name in place of 'all'>

REMOVE FINISHED

W: library

<list the names of library memories>

LIBRARY MEMORIES

descriptions poetry names exercise

W: recall

NAME OF MEMORY: poetry

RECALL FINISHED

W: parts

PARTS OF SPEECH IN STORE

poem title line npp np lvp lv vip vi npl noun adj prep

W: get

PATTERN: poem
PATTERN:

****

A brown branch.

The boughs grow near trunks.
A green leaf dies near a branch.
The proud pines seem beautiful.
The green branch dies beside the leaf.
The tiny pine shrivels near the beautiful blossoms.

****

W:

2.5. PAT2: Implementation

The program has a modular structure. At the the top level is a loop, which matches the command string to a procedure call which interprets that command. The 'put' procedure builds a representation

of the grammar rules, with the POP-2 'valof' function providing an association between the left hand side (L.H.S.) of a rule and a list containing possible productions from that L.H.S..

The 'get' procedure reads words into a list and then carries out a breadth-first replacement, scanning along the input list, copying the words into an output list until a L.H.S. is found. The procedure then selects, at random, one production from the L.H.S. and adds it to the output list. The scanning continues until the end of the input list is reached. The input list is then replaced by the output list for another scan. This is repeated until no L.H.S. remains in the output list.

2.6. PAT3: Structure

PAT3 allows the user to specify 'meanings' for parts of speech, based on the semantic markers of Katz and Fodor (1963). These constrain the generated text. Consider the following grammar rules:

```
sentence -> a noun is adjective
noun -> mouse/rat/lion/tiger
adjective -> large/huge/small/tiny/big/little
```

The rules are as likely to generate 'a lion is small' or 'a rat is huge' as 'a lion is big' or 'a mouse is tiny'. We require a means of restricting the choice of adjectives to those that agree with the previous noun. This is done in PAT3 by a) associating 'meanings' with grammar rules, and b) indicating the parts of speech to be matched.

2.7. PAT3: Presentation to the User

PAT3 accepts rules such as:

```
W: put

PART OF SPEECH: sentence
WORDS: a noun #1 is adjective #1
                          <a '#' symbol followed by a number
                           is a 'tag' indicating that the
                           preceding part of speech is to be
                           matched for meaning with another,
                           similarly numbered part of speech.>
MEANING:
                          <The sentence itself has no
                           prescribed meaning.>

PART OF SPEECH: noun
WORDS: lion/tiger
MEANING: animal big
                          <'Meaning words' for 'lion' and and
                           'tiger'.>

PART OF SPEECH: noun
WORDS: mouse/rat
MEANING: animal small

PART OF SPEECH: adjective
WORDS: huge/large/big
MEANING: big

PART OF SPEECH: adjective
WORDS: tiny/little/small
MEANING: small

PART OF SPEECH:

PUT FINISHED
```

The 'get' command, given the pattern 'sentence' will always generate a sentence in which the adjective agrees in meaning with the noun:

```
W: get

PATTERN: sentence.sentence.sentence.
PATTERN:

MEANING:

**********************************************************************

A tiger is huge. A tiger is large. A rat is tiny.

**********************************************************************
```

PAT3 contains a few more sophistications which, while not making the

program more difficult for a child to operate, offer the possibility of specifying more complex grammars, with greater semantic constraint. The semantic markers can propagate up and down levels of grammar rules so, in the example below, the choice of 'abstract' or 'inanimate' noun is determined by a meaning word attached to 'parta' or 'partb', and the match in meanings between the two nouns is specified by tags in the simile rule:

```
W: put

PART OF SPEECH: simile
WORDS: parta #1 is like partb #1
MEANING:

PART OF SPEECH: parta
WORDS: my noun/your noun
MEANING: abstract

PART OF SPEECH: partb
WORDS: a noun
MEANING: inanimate

PART OF SPEECH: noun
WORDS: joy/happiness
MEANING: abstract happy

PART OF SPEECH: noun
WORDS: sorrow/anguish/loneliness/sadness
MEANING: abstract sad

PART OF SPEECH: noun
WORDS: voice
MEANING: abstract hear

PART OF SPEECH: noun
WORDS: love/passion/desire
MEANING: abstract passion

PART OF SPEECH: noun
WORDS: wasteland/tombstone/barren desert
MEANING: inanimate sad

PART OF SPEECH: noun
WORDS: symphony
MEANING: inanimate hear happy

PART OF SPEECH: noun
WORDS: dirge/tolling bell
MEANING: inanimate hear sad
```

```
PART OF SPEECH: noun
WORDS: trumpet
MEANING: inanimate hear

PART OF SPEECH: noun
WORDS: tempest/hurricane/whirlwind
MEANING: inanimate passion

PART OF SPEECH: noun.
WORDS: blossom
MEANING: inanimate happy

PART OF SPEECH:

PUT FINISHED

W: get

PATTERN: simile^.simile^.simile^.simile.
PATTERN:

MEANING:

**********************************************************************

Your joy is like a blossom.
My voice is like a trumpet.
My desire is like a hurricane.
My sorrow is like a wasteland.

**********************************************************************
```

A meaning may be given after 'get' to constrain the entire pattern, as in the example below.

```
W: get

PATTERN: poem
PATTERN:

MEANING: sad

**********************************************************************

A lonely boy

Wait!
A boy hates still you.
Weeps beside a stream.

**********************************************************************
```

The 'poem' is generated by a grammar containing some 30 rules and a vocabulary of 150 words. The grammar produces a form of 'deep structure' (Chomsky, 1968) which must then be transformed into normal English syntax. Each line generated by PAT3 is stored in a file as a list of words, with the associated parts of speech and meaning descriptors. Thus, the third line in the example above would be stored as:

```
[[article a][noun human small boy][verb third hates][adverb time
still] [pronoun second you]]
```

This can be given as input to the WALTER program (described below). Prewritten rules for WALTER then tidy the grammar, producing the finished poem:

A lonely boy.

Wait!
A boy still hates you.
Weep beside a stream.

Two further poems, generated from the same grammar are printed below, the first with the meaning descriptor 'hear' and the second with the descriptor 'see':

You.

Hear a cheerful boy.
While you want to hear a voice
a busy woman does not work quickly with you.
Listen!
You fade.

A calm glass.

I think.
I am like the glass.
I forget quickly.

2.8. PAT3: Implementation

The PAT3 program is similar in structure to PAT2. The 'put' procedure reads and stores alternatives for each part of speech as a list, of the form:

[[word][meanings][word][meanings]]

The 'get' procedure then scans the input list and, when a L.H.S. is found, calls a procedure 'generate' which recursively carries out a depth-first generation from the L.H.S., returning both a terminal string and any meanings found at lower levels of the recursive call. If the part of speech is tagged, these meanings, plus any passed down from higher levels, are added to a variable associated with the tag. In generating from a part of speech the alternative chosen is that which has the greatest intersection between its meanings and the meanings for the L.H.S. (including any acquired from the tag variable).

One version of the program allows meaning attributes to be ordered (e.g. boy [human male small], where 'human' is the most important attribute) and the selection algorithm gives extra weight to meanings at the head of the list.

3. WALTER

3.1. WALTER: Structure

WALTER (Word ALTERer) is a syntax-directed text transformer, which carries out a surface parse of the input text and then applies rules to carry out word substitutions or syntactic transformations. The rules may be created by the user or retrieved from a library

file. At its simplest, WALTER acts as a two command word processor. The user types the command 'new' to create text and 'change' to modify the text. Unlike conventional word processors, it can interpret rules for sentence-level syntactic transformations. By invoking these rules the user can explore, in a systematic manner, the effect of syntactic transformations on his own text.

3.2. WALTER: Presentation to the User

The use of WALTER can best be illustrated by an annotated dialogue:

```
W: new
                                <The child types in a new story to
                                 WALTER>

STORY: Once there was a pretty princess. The princess lived
STORY: in a big house in a forest. The forest was drak.
STORY: She was very lonely because she had no friends
STORY: to play with in the house.
STORY:

NEW FINISHED

W: change                       <Alter text>

OLD WORDS: drak
NEW WORDS: dark                 <Correct spelling>

OLD WORDS: house                <Substitute words>
NEW WORDS: castle

OLD WORDS:

**********************************************************************

Once there was a pretty princess. The princess lived in a big
castle in a forest. The forest was dark. She was very lonely
because she had no friends to play with in the castle.

**********************************************************************

W: lookup
                                <Carry out a surface parse of the
                                 text>
LOOKUP FINISHED
```

W: change

OLD WORDS:

<If there is no input for 'OLD WORDS' the 'RULES' prompt is given>

RULES: combine

<Use prewritten rules for sentence combining>

****

Once there was a pretty princess who lived in a big castle in a dark forest. She was very lonely because she had no friends to play with in the castle.

****

W:

'Combine' applies three transformation rules: a 'reduced relative' rule to produce 'Once there was a pretty princess. The princess lived in a big castle in a dark forest.'; a 'relative' rule to produce: 'Once there was a pretty princess which lived in a big castle in a dark forest', and a 'who' rule (which alters the 'which' following a 'human' noun), to produce the final transformed sentence. Normally the child would use prewritten rules rather than create her own grammatical transformations, but in the example below the child investigates the effect of swapping pairs of nouns in a sentence:

****

Once there was a pretty princess who lived in a big castle in a dark forest. She was very lonely because she had no friends to play with in the castle.

****

W: change

OLD WORDS:

RULES: swap

WALTER DOES NOT RECOGNISE: swap
WHAT SORT OF RULE IS IT?

<WALTER asks the user to create a rule>

```
OLD WORDS: noun1 1 noun2          <A number matches any
NEW WORDS: noun2 1 noun1          sequence of words>

OLD WORDS:

**************************************************************

Once there was a pretty castle who lived in a big princess in
a dark forest. She was very lonely because she had no  castle
to play with in the friends.

**************************************************************

W:
```

Further commands allow the user try out transformation rules without permanently altering the text and to transfer text to and from file:

try - test out transformations

This is identical to 'change', except that it shows the effect of transformations without changing the text. Thus a subsequent 'try' or 'change' will act on the old text.

save - save text in a memory file

Text, plus any associated parts of speech are stored in a file. Any single word can be chosen as the file name.

recall - recall text from a memory file

print - send the current piece of text to the line printer

memories - print the names of the memory files

rules - print out the current rules

dictionary - print the dictionary used by 'lookup'

goodbye - return to POP-2

An automated thesaurus is available within WALTER:

```
W: thesaurus

WORD TO BE LOOKED UP: big

**********************************************************************
big: large; huge; gigantic; massive; loud; giant; important
**********************************************************************

W:
```

3.3. WALTER: Implementation

At the top level of WALTER a loop repeatedly interprets commands. The 'new' command invokes a procedure which reads text word by word into a list. The 'lookup' procedure then transfers each word to a list containing its part of speech, zero or more attributes and the word itself, e.g.:

```
[the indolent boy tries harder]
becomes
[[article the][adjective indolent][noun human boy]
[[verb third][noun plural]tries] [adjective comparative harder]].
```

'Lookup' calls the procedure 'getdefs' which first applies Winograd's affix-stripping algorithm (Winograd, 1972, p.74) to each word, creating a set of possible word roots that are then matched against the dictionary. The WALTER dictionary contains 800 of the words most frequently used in children's essays and is in two sections. The words accessed most frequently are in core and the remainder are stored in one sequential file. Each dictionary entry has the form:

```
word [<part of speech><zero or more attributes>]
```

or, if the word can be more than one part of speech:

word [[<part of speech><zero or more attributes>][<part of speech> <zero or more attributes>]....]

For example:

boy [noun human]
try [[verb][noun]]

Given the sequence [the indolent boy tries harder] the 'getdefs' procedure first produces the list [the indolent boy [4 tries try][9 harder hard]].Each element in the list contains either a single word to be matched against the dictionary or a list of possible root words, with a number indicating the affix type. A number 4, for example, indicates that if 'try' is entered as a 'noun' in the dictionary, then 'tries' will be 'noun plural'; if the dictionary indicates 'try' to be a verb, then 'tries' will be 'verb third' (ie. third person singular). If the dictionary contains an entry for 'try' as both 'noun' and 'verb' then both possibilities will be returned. The WALTER dictionary contains the latter, so a call of the 'dictionary' procedure produces the list:

[[article the]indolent[noun human boy][[noun plural][verb third]tries][adjective comparative harder]]

The dictionary has no entry for 'indolent', so the word is added to the output list unchanged. This list is returned by the 'getdefs' procedure to 'lookup'. 'Lookup' then call 'ask' which scans the list and asks the user to supply a part of speech for each word not found in the dictionary:

I DO NOT RECOGNISE indolent
WHAT IS ITS PART OF SPEECH?

PART OF SPEECH: adjective

The completed list - [[article the][adjective indolent][noun human boy][[noun plural][verb third]tries][adjective comparative harder]] - is held in a global variable 'wordlist' ready for modification by the 'change' command.

The 'change' command first invokes a procedure 'transform' that applies transformation rules to 'wordlist' and then the procedure 'printlist' that prints the altered list to the terminal. 'Transform' prompts the user to either supply transformations, or to enter the names of prewritten sets of transformation rules. Each set contains one or more rules and each rule is applied in turn.

The procedure 'amatch' takes a rule and 'wordlist' as arguments'. It moves a pointer word by word along 'wordlist', attempting to match the left hand side of the rule against the list beginning at the pointer. If no match is found the word at the pointer is copied to an output buffer. Whenever a match occurs each element of the left hand side of the rule is associated with one or more elements of 'wordlist', for example:

```
RULE:       noun1 1 noun2 -> noun2 1 noun1

WORDLIST:  [[article the][noun human boy][verb third sees]
                          ^
                          | pointer
            [article the][noun human girl][punctuation .]]

NOUN1 is associated with  [noun human boy]
1     is associated with  [[verb third sees][article the]]
NOUN2 is associated with  [noun human girl]
```

Then the associated values for each element on the right hand side of the rule are added to the 'outputlist' and the 'wordlist' pointer is

moved to the end of the matched pattern:

```
WORDLIST: [[article the][noun human boy][verb third sees]
           [article the] [noun human girl][punctuation .]]
                                  ^
                                  | pointer
OUTPUT LIST: [[article the][noun human girl][verb third sees]
              [article the] [noun human boy]]
```

This process is repeated until the pointer reaches the end of 'wordlist'. The 'amatch' procedure then returns 'outputlist', which is copied to 'wordlist' and used as one argument for a new call of 'amatch', with the next rule as the other argument.

4. FANTASY

4.1. FANTASY: Structure

The FANTASY program, written in the C language by Chris Miller, is similar in concept to the many 'Adventure' programs, in which a player explores an environment, finding treasure and fighting off the inhabitants. The environment has the structure of an associative network, with nodes representing rooms linked by arcs representing doors or passages. Each room has a written description and may contain objects. A door has a difficulty level and a player may need to repeat a 'move' command a number of times to pass through a 'difficult' door. Each object has a visibility level and less visible objects may not be seen until the player has issued the 'objects' command a number of times. An object is also given a value. When a player picks up an object his score increases by its value. Inhabitants may move through rooms collecting treasure, and each inhabitant has a viciousness level. A more vicious one will attack and eventually kill a player who enters its room. Lastly, sporadic

events occur which sap or restore a player's strength.

FANTASY differs from the conventional 'Adventure' games in that data for the environment is stored in a single text file and a new environment can be created quickly and easily. The file is divided into sections, for rooms, door types, health states, door positions, inhabitants, objects, attack types and events. A typical entry in the 'rooms' section might be:

```
4       12      4       4       180     'a tiny study, whose
wall are lined with dusty tomes, bearing titles such as "Ghouls
and Werewolves" '
```

The entries indicate: the number of the room, the number of the first of a list of exits, the number of the first inhabitant, the number of the first object, the light available in the room (objects are less visible in dark rooms), and the room's description.

4.2. FANTASY: Presentation to the User

On entering the game a player is given a description of the first room, the names of the inhabitants of the room, a report of their activities and a list of possible exits. The player then issues single word commands to move, inspect objects, take objects or fight inhabitants. The full set of commands are:

```
Room              - What room am I in?
Inhabitants       - What inhabitants does this room currently have?
Objects           - What treasure can I see?
Health <n>        - What is the health of inhabitant <n>?
Possessions <n>   - What does inhabitant <n> possess?
Attack <n>        - Attack inhabitant <n>.
Take <n>          - Take object <n>.
Drop <n>          - Drop <n>th possession.
Exits             - What are the exits from this room?
Quit              - Leave the game.
```

A command can be abbreviated to as few letters as are necessary to distinguish it from all other commands. A short sample of dialogue with FANTASY is given below.

Welcome to FANTASY

You are in a narrow hallway festooned
with cobwebs lit only by a dusty skylight
an imposing oak door leads south
a solid wooden door, with a Do Not Disturb notice hanging on the doorknob leads west
an ornate wooden door leads east
an ornate wooden door leads north west
There is nobody else here

west

You are in a small bedroom, dominated by
a huge four-poster bed with a faded canopy and ornate oak supports
a solid wooden door with a large brass doorknob leads east
The following are also here:
1 - a wizened old man

a wizened old man tried to leave through a solid wooden door with a large brass doorknob

objects

you can see
1 - a beautiful ming bedpan

a wizened old man tried to leave through a solid wooden door with a large brass doorknob

take 1

ok

a wizened old man has just left through a solid wooden door with a large brass doorknob (east)

value

your possessions are worth 150 gold pieces

quit

I hope you have enjoyed the game

4.3. FANTASY: Implementation

The program is compiled from a set of C modules, which decode a command and make the appropriate change of state. If the command is to move to a new node then the program calls a 'probability checker' with the 'difficulty level' of the door as input, This determines whether the move command is accepted. If the 'difficulty level' is 50 then 50% of the move commands through that door will be successful; if the level is 100 then every command to pass through the door will be successful.

If the command is to search for objects, the program again calls the 'probability checker', for each object, with the 'visibility level' of the object as input. This determines whether or not the description of the object is displayed.

After a move by the player, the program makes a move for each inhabitant. If an inhabitant is in the same room as the player then the 'probability checker' is given the 'viciousness level' of the inhabitant as input. This determines whether or not the inhabitant makes an attack on the player. When the player attacks an inhabitant, or vice versa, the health level of the victim is lowered, until a level of zero and death.

CHAPTER 6

THE INVESTIGATION

The computer-based teaching scheme was tested with a group of six eleven-year-old children, to investigate its effect on each child's creative writing and understanding of language. A similar group of children were given normal classroom teaching, plus an occasional visit to the Artificial Intelligence Department for computer-based work unrelated to English. The children from both groups were set two essays at the start of the investigation and two at the end, to provide a comparative set of creative writings. These essays are reproduced in appendix 4.

Three methods of evaluation were used. First, an assessment was made of the writing development of the children in the experimental group. Second, the pre and post essays from both groups were rated for overall quality. Third, both sets of essays were subjected to a feature analysis.

1. PARTICIPANTS

The entire Primary 7 class of South Bridge School, a small Primary school in a mainly working class area of Central Edinburgh, was used for the investigation. Six of the twelve children in the class were randomly assigned to the experimental group, and six to the control group. The experimental group contained three girls and three boys; the control group contained two girls and four boys. Shortly after the start of the project one boy from the control group left the school, so reducing its size to five children.

In August 1979, the children's class teacher administered the Burt-Vernon Reading Test and the Burt-Vernon Spelling Test. The results show a random distribution of children from the two groups, a mean Reading Age of 12y 5m, and a mean Spelling Age of 10y 11m. When the sessions began in September 1979 the children's average chronological age was 11y 1m.

This age group was chosen both for pragmatic and theoretical reasons. The education authority was far more willing to grant permission for primary school children to be used as experimental subjects than secondary children. More important, the teaching scheme is designed for children who have acquired rule knowledge of language, and an eleven-year-old children should be at about that stage of language development.

2. DESIGN

The children took part in the investigation over three school terms, from September 1979 to June 1980. The sessions were held in the Department of Artificial Intelligence and each one lasted for 60-70 minutes (excluding travel time of approximately 15 minutes each way). While they were absent, the remaining children were given normal classroom work (which included an occasional English lesson) by their teacher. Figure 1 shows the design of the investigation. All twelve children attended the first four sessions, when they wrote the initial essays. They were then assigned to the two groups and shortly thereafter one child left the control group. The experimental group spent the next nine sessions working on the first part of the teaching scheme, concerned with language manipulation. A diagnostic test of language abilities confirmed that two of the children had

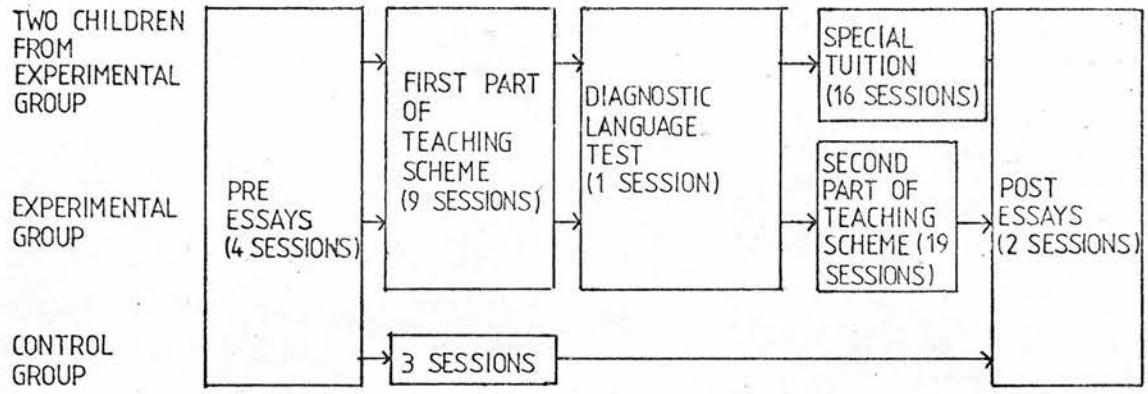

Figure 1. The design of the investigation.

little or no rule knowledge of language. They were given separate tuition, while the remaining four children continued with the second part of the course.

The control group had three sessions at the Department, to meet the author and overcome resentment at not being included in the project, which might otherwise have affected their test performance. They followed a teaching scheme prepared for the LOGO project (duBoulay & O'Shea, 1976), writing simple computer programs in LOGO to draw shapes with a 'turtle', a small motorised cart with a pen that moves under computer control. Like the experimental group, they used computers as a learning aid, but in a different subject area. The two groups came together for the final essays.

3. EQUIPMENT

Each child was given a loose-leaf folder containing the worksheets. The children were asked to write answers to the worksheet questions in the spaces provided and to insert any other written material, including drafts, in the folder. The games and other non-

computer activities were designed by the author, with the exception of 'Context', which is a commercially-produced board game, now out of production. The computer programs were implemented on a DEC PDP 11/60 computer under the UNIX operating system. Three Perkin-Elmer 550 VDU terminals were available.

4. AIMS AND EVALUATION

The aims of the investigation were: to ascertain the children's initial rule knowledge of language; to discover the effect of the teaching scheme on each child's development of writing abilities; to assess the children's attitudes to the teaching scheme and the computer activities; to assess the influence of planning and revision on the style, text structure and vocabulary of each child's writing; to note those sections of the scheme that caused the children particular difficulty; to gain ideas for a future revision of the scheme.

Given these aims and the fact that this was the first trial of the teaching material, an 'illuminative evaluation' 'whose primary concern is with description and interpretation rather than measurement and prediction' (Parlett and Hamilton, 1972) was considered to be more appropriate than a psychometric evaluation. We are interested in more than just the aggregate end results of the teaching scheme; we want also to understand the means by which a child becomes a mature writer, the effect of each part of the teaching scheme on the children's understanding and control of language, and the variation amongst the children in learning strategies and skills acquired during the scheme. We need therefore to monitor the progress of individual children. Case studies can

illuminate the learning process and so tell more about the relation between teaching and language development than measures of learning outcome.

As teacher and resource, the author made no attempt to remain distant and uninvolved. The author observed the children throughout the investigation and wrote a report on each session. Every piece of writing, including notes, rough drafts and computer printouts, was collected and filed along with the completed worksheets.

All the children were asked to write four essays, two before the start of the investigation, and two at the end. They were produced under classroom test conditions, with a fixed time of 45 minutes per essay. Each child was asked to produce a narrative and a descriptive essay, on a topic chosen and introduced by the author:

Pre Test - Descriptive Essay: 'A Visit to the Department'

Pre Test - Narrative Essay: 'An Adventure While Travelling'

Post Test - Narrative Essay: 'An Island Adventure'

Post Test - Descriptive Essay: 'A Fair'

The author asked the children to write a description of an interesting and exciting fairground.

To profit from the teaching scheme, a child should already have a tacit rule knowledge of language. Without this, a child would be unable to follow the activities which involve language manipulation and the recognition of syntactic patterns. Children should be reaching this stage of language development around the age of eleven, so we would expect a sharp division in the experimental group,

between those children who cannot cope with the linguistic demands of the scheme and those who enjoy and benefit from the opportunity to experiment with language. These latter children should be able to follow the worksheets and operate the computer with little or no assistance. As the scheme progresses, we would expect them to spend time in planning and revising their writing. The revisions in later work should be substantial, with reordering of sentences and major insertions and deletions between drafts. This should result in a marked improvement of quality, with a wider range of text structures and a more coherent structure.

The essays were analysed for linguistic features. We would expect to find differences between the pre and post essays of some, or all, of the children, with the later essays containing: a greater variety of linguistic structures, at all text levels; more 'mature' features; fewer 'immature' features.

We would not expect the experimental group children to write as well in the tests as they did during the project, when there was ample time for planning and revision. Nevertheless, there should be transfer of skills from the teaching scheme, so the post essays of those children who completed the scheme should contain 'mature' features not found in their earlier essays. We would expect that the more substantial changes in style and structure between pre and post essays would come from the experimental group children than the control group children.

As another more conventional assessment, each essay was marked by two English teachers, working independently. The marking categories - 'general writing quality', 'content', 'organisation',

'style and appropriateness' - are similar to those used for O-Level English examinations. The marking instructions given to the assessors are in appendix 3. The post-test essays were written a week after the end of the scheme, so the childen had little time to practise any new-found skills. We would not expect the duration of the scheme and the size of the groups to be sufficient for any statistically significant difference to be found between the mean scores of the control and experimental groups.

The different methods of assessment should be regarded as spotlights, illuminating aspects of children's writing abilities. Taken together, they should indicate: first, the child's process of writing; second, the particular styles and techniques of writing that a child employs; third, the overall quality of each child's written productions. This profile is useful both for assessing the writing development of a group of children, and for diagnosing a particular child's preoccupations and weaknesses.

CHAPTER 7

DESCRIPTION OF THE SESSIONS AND ASSESSMENT OF WRITING PROCESS

This chapter describes the experimental group sessions and examines the changes in writing process of these children during the period of investigation. The emphasis is on the children's generation and transformation of text, and the effect of planning and revision on their creative writings. The children worked in pairs or groups for some of the writing activities, so it is not always possible to identify a particular child's contribution to a piece of writing. We can, nevertheless, study changes between successive drafts and the types of plan produced, whether by a single child or a group. We shall also comment in this chapter on the children's attitude to the scheme and their interactions with the computer. A timetable of the experimental group sessions is given in table 1. The table shows the activities of the majority of children. Occasionally one child would lag behind or move ahead of the rest. The 'newspaper' sessions provided an opportunity to regroup.

1. INTIIAL ESSAYS

All twelve children attended the first four sessions and produced four pieces of writing. On the first session the children were asked to draw self-portraits, which were then shown around the group, and then write short autobiographical essays, set mainly to give the author an indication of their background and interests.

Session two began with a tour round the Department. The children were shown the VDUs that they would be using, Freddy, the

Essay i	Essay ii	Essay iii	Essay iv	Session 1
'Myself'	'Visit to the Department'	'LOGO Instructions'	'Adventure While Travelling'	Worksheet 1 Boxes PAT1
Session 2	**Session 3**	**Session 4**	**Session 5**	**Session 6**
PAT1 'Context'	'Context' Worksheet 2	Worksheet 2 Boxes	Worksheet 2 Newspaper	Worksheet 2 Newspaper
Session 7	**Session 8**	**Session 9**	**Session 10**	**Session 11**
Newspaper	Newspaper Worksheet 3	PAT2 Worksheet 4	Language Test Worksheet 5	Worksheet 5
Session 12	**Session 13**	**Session 14**	**Session 15**	**Session 16**
Worksheet 6	Visit to Waxworks	Writing Description of Waxwork	Writing Description of Waxwork	Worksheet 7
Session 17	**Session 18**	**Session 19**	**Session 20**	**Session 21**
Newspaper	Newspaper	Newspaper	Newspaper	Descriptions of Pictures
Session 22	**Session 23**	**Session 24**	**Session 25**	**Session 26**
WALTER Worksheet 8 Descriptions of room	Descriptions of room	Worksheet 9 Worksheet 10	Writing Text for FANTASY	WALTER Writing text for FANTASY
Session 27	**Session 28**	**Session 29**	**Essay v**	**Essay vi**
Playing FANTASY	Building Story from FANTASY	Writing Story	'Fairground'	'Island Adventure'

Table 1. Timetable of the experimental group sessions.

robot, performing a block-stacking exercise, and Eliza, a program that holds an English language 'conversation' with a user. The children were then asked to write an essay describing the visit.

For the third session, the author's intention was that the children should write a set of instructions for operating the LOGO 'turtle'. This would involve their describing the functions of the various buttons used to enter instructions into the computer that controlled the turtle, and the sequence of key-presses required to draw a simple shape, such as a square. This exercise was included because the author had planned to provide a series of worksheets on expository writing. In the event, the children were restless and talkative; some were unable to understand the operation of the button box, and all seemed unfamiliar with the style of instructions.

For the fourth session the children were presented with audio-visual material of the theme of 'transport' - slides; cine film; posters; an audio tape - and were then asked to list all the means of transport they had seen. This led to a discussion on 'adventures while travelling' and then to the writing of an essay on 'An Adventure on a Journey'. At the end of the fourth session the children were assigned at random to the experimental and control groups.

2. EXPERIMENTAL GROUP CHILDREN

2.1. Sharon

Sharon's personality was a decisive influence on the group, fortunately a benign one. Her teacher remarked that 'she dominates the other girls' and 'is carrying out a campaign against Anne [one of

the control group children] trying to enlist the others'. A quick witted girl, she had spells of intense and short-lived enthusiasm. She became captivated, for example, by Roget's Thesaurus and, demanding to use it herself, spent much of one session looking up synonyms for common words. This curiosity is shown also in her essay on 'myself'. Whereas the other children had written about their love of football and television, she gave her hobby as 'looking and playing with the insides of watches'. For all her faults she cooperated with the project (had she not it might have been far less successful) and seemed genuinely grieved when told it had to end.

2.2. Dorothy

Dorothy was an alert and imaginative girl, with a personality that was assertive but not overbearing. At the start of the project, she appeared to be less able than Louise or Sharon, but this changed as she discovered an aptitude for the activities. Her enthusiasm rose and with it the ability to discuss and manipulate language. She worked well with Louise and their abilities were complementary: Dorothy tended to be inventive and analytic, whereas Louise was thorough and methodical.

2.3. Louise

Louise was an intelligent and conscientious, but rather unimaginative, girl. Given the choice Dorothy and Louise worked together and it is difficult to gauge the contribution of each to the FANTASY game and essay. Although Dorothy often dominated the conversation between them, Louise contributed to the partnership, writing the 'Haunted House' story, to comments supplied by Dorothy.

2.4. James

James found himself in a difficult social position during the project. He identified with the two other boys, and sided with them in disputes with the girls, but was frequently distracted by them. His attitude to work, however, resembled the girls' and so he was torn between the two groups. In the second part of the project he was the only boy amongst three girls, and was only grudgingly tolerated by them. In return, he became aloof and his partnership with Sharon for the final activity dissolved when both refused to work together on the essay.

2.5. Derek and Kevin

Derek and Kevin formed a close pair and generally spent the sessions chattering to each other. Their rarely attended to a task for longer than five minutes and often distracted the other children. Kevin was clearly dominant and was always ready with a sharp comment. When separated from each other, they were more restrained and cooperative.

Their class teacher offered a brief character sketch of each child in the experimental group:

Sharon: Intelligent but domineering. A ready talker and leader.

Dorothy: Sporadically imaginative and creative. Competes with Sharon for attention. No exposure to books, except through school.

Louise: Quiet, methodical and intelligent.

James: Somewhat shy. From a professional family. Moderately intelligent. Is exposed to books at home.

Kevin: Confident and 'street wise'. A local boy, from an affluent family. No exposure to books at home.

Derek: Erratic temperament and a slow learner.

3. LANGUAGE EXPLORATION

The first worksheet contrasts the word structure of a sentence with a random word sequence; it demonstrates that language consists of more than a random string of words, and accustoms the child to using a computer. The children were read a story (reproduced in the worksheet) about a woman named Pat who had constructed a machine to generate random strings of words. A question in the worksheet then asks 'Do you think that Pat's machine would write good poetry? Why?'.

The children's answers to this first question indicates their differences in aptitude. Dorothy, Louise, James, and Sharon all answered 'No', replying 'The machine is stupid'; 'All it would do was drop the words out one by one'; 'The words might be in a muddle'; 'It only brought out the words she had made. It wasn't doing anything'. Kevin and Derek, however, both decided that Pat's imaginary machine could write good poetry 'because it can do all sorts of complicated things' and 'because it is a good idea how to use a machine to write poetry'.

The children then worked in pairs to produce similar 'poems' to Pat's, by placing cards, each containing a single word, in a 'word

box' and then taking them out again in random order. None had any difficulty with this exercise and all produced random sequences of 15 words for the worksheet. They then carried out a similar exercise using the PAT1 program on the computer. They typed words into the program's 'word box' and generated 'poems' containing those words, specifying the number of lines in the poem and the number of words per line. Three terminals were available to the project, so the children normally worked in pairs, taking turns at typing.

Although none of the children had previously used a computer, nor had they learned to type, they found few difficulties in operating the program. The only recurrent problem was caused by a child forgetting to press the 'return' button at the end of each line of input. By the middle of the second session the children had generated some simple 'poems' and had begun to create more varied vocabularies by swapping terminals and adding to each other's lists.

At the end of the second session the children began a game of 'Context' - a sentence version of 'Scrabble'. The players hold cards, each containing one word, colour-coded according to part of speech. Each player, in turn, must add as many cards as possible to those already laid on the table, in order to form meaningful sentences. The player maintains a stock of cards with set number of each part of speech and the stock is replenished from a pool of cards at the end of a turn.

The children played in pairs (Louise and Kevin; Derek and Dorothy; Sharon and James). At first they found difficulty in building the words into sentences but, as the game progressed, they became more competent and enthusiastic, forming larger sentences with

prepositional and adverbial phrases. At this stage there appeared to be a marked difference in ability between the children. Sharon and Louise were most proficient at the game, laying out the words in trial combinations before laying them on the table, while Derek and Kevin were inattentive and poor at manipulating the words. Neither James nor Dorothy showed any especial flair for the game.

During the third session the children began the second worksheet, 'Words in Order', which instructed them to sort the words in the 'word box' into separate 'part of speech boxes', creating one box for each part of speech. The worksheet contained a list of sample words, with their associated parts of speech, and the children were given a simple algorithm for the sorting:

> In order to find the part of speech of a word, first write a sentence containing that word, eg for the word 'cat', the sentence 'The cat sat on the mat'. Then find from the list a word that can fit the same place in the sentence, e.g. 'The DOG sat on the mat'. The list says that 'dog' is a noun, so 'cat' is likely to be a noun.

The author presented the algorithm verbally and worked through a number of examples. Both Kevin and Derek had great difficulty in sorting the words. Derek sometimes followed the method correctly, but once, when asked by the author to classify the word 'cat', looked through the list then wrote 'The cat eats'. 'Eats' is listed as a verb, so he placed 'cat' in the 'verb box'.

The three girls finished Worksheet 2 midway through session five. They were then allocated jobs for producing a newspaper - poetry editor; story editor; designer etc. - and sent off to interview members of staff in the Department. James continued to work steadily on Worksheet 2 but, by the end of the fourth session,

Derek and Kevin were frustrated and distracted by the activities of the girls.

For the boys, work on Worksheet 2 continued into session six. By the end James and, with much help, Kevin had finished. Derek, continually asking for assistance, had managed to complete 4/5ths of the worksheet. At the end of the session he asked if he could take the worksheet home and, to the author's surprise, arrived the following week with a completed copy.

The last exercise in Worksheet 2, a sentence crossword, is a useful diagnostic test of language manipulation. To complete the puzzle one must first select a word of the correct part of speech for each square and then make changes to improve the syntax and meaning of the sentences. Each child worked on this exercise alone, without intervention or guidance from the author (except in the case of Kevin, who was helped to choose parts of speech), yet each carried out a sequence of operations in the same order:

(1) Choose the correct part of speech.

(2) Make transitive/intransitive verb substitutions.

(3) Alter words to improve meaning.

(4) Alter words so that verbs agree with nouns in number.

The children progressed different amounts along this sequence:

James

at first chose some incorrect parts of speech. He altered some of these, eq 'meat' -> 'bites', but left others unchanged: 'but'

as an article and 'moved' as an adjective.

Derek

chose the correct parts of speech (possibly with assistance, as he completed this exercise at home) but made no improvements.

Kevin

selected, with much assistance, the correct parts of speech, but made no further changes.

Sharon

chose the correct parts of speech, then altered the intransitive verb 'glows' to the transitive verb 'hears', thus changing 'moon glows the sea' to 'moon hears the sea'. She then carried out a further change: 'a white water drinks' to 'a blue water drinks', presumably to improve meaning.

Louise

chose the correct parts of speech and then altered 'moon glows the girl' to 'man hears a girl', changing the verb type from intransitive to transitive and the noun to improve the sense of the connecting sentence 'the white [moon ->] man has a old dog'.

Dorothy

chose the correct parts of speech. She then altered sentences to improve their sense, e.g. 'Moons drink quickly' to 'Moons move quickly' and made a series of changes to ensure agreement in number, e.g.: 'dog' to 'dogs'; 'moves' to 'move'. Her completed crossword is reproduced in Figure 1.

ARTICLE the	ADJECTIVE silent	NOUN people	VERB see	ARTICLE the	ADJECTIVE white	NOUN moons
NOUN moon		VERB see		ADJECTIVE black	NOUN people	VERB move
VERB glows		ARTICLE the		NOUN dogs	VERB drink	ADVERB quickly
	ARTICLE the	NOUN moons	ADVERB quickly	VERB move		

Figure 1. Dorothy's completed sentence crossword.

The children had worked through a long and demanding worksheet, so they spent the next two sessions as journalists. They all worked diligently and, by the end of the session eight, had produced a two page newspaper. Its content was determined largely by the children, who also took the photographs and laid out the pages. As well as giving them a break from the worksheets, it provided a purpose for writing and a well-defined audience, their classmates. The newspaper was photocopied and circulated around the school.

Dorothy was the only child to adopt the style and terminology of a journalist:

> I have been interviewing Mr. Sharples. He has been working here for two years and likes working mostly with computers that can make up poems like Pat. He said to me that he

> doesn't think Pat makes sense but he thinks that they might get a better one. He has only had two classes in the 2 years that he has been working here.

The others either wrote descriptions:

> Cecil is a new robot. This is what he looks like [alongside a photograph of the robot]. He has a long arm which can pick up things like little boxes. He doesn't look like Freddie but he does things like Freddie. But Freddie picks up bigger things. (Derek)

or expositions:

> This story is about Pat. If you read the report it will tell you facts about Pat it may not be useful but some are interesting. Now pat is a computer who makes poetry. She does not always answer as you expect. Sometimes it does not make sense. First you put words in, any words you want, then you put get and you write maybe 4 words in a line and 5 lines and press the green button and it writes you a poem. (Louise)

Although some of the children copied out their articles to fit the format of the newspaper, their only revisions were an occasional correction of spelling.

Worksheets 3 and 4 contain instructions for the use of PAT2, which generates word strings for a specified vocabulary and part of speech pattern. The children at first worked in three pairs, each containing one boy and one girl. This arrangement, unfortunately, annoyed the girls, who regarded their partners as slow-witted, and embarrassed the boys, particularly Kevin and Derek, who were unable to keep pace. After session nine the boy/girl pairings were abandoned and for the rest of the project the children chose their own working partners.

The two sessions working with PAT2 passed slowly but successfully. The main problem facing all the children was a lack of

expertise in typing. Derek, and to a lesser extent Kevin, demanded continual attention. They seemed reluctant to press any key without guidance or approval. The others progressed steadily, adding words and their associated parts of speech to a personal vocabulary file and then generating sentences by typing in sentence patterns. These patterns were initially copied from samples in the worksheet, but each pair produced at least one sentence pattern of their own, with results such as: 'The cats ate a dog' and 'The black girl hears boy'.

Sharon and Louise completed Worksheet 4 midway through session 9 (Dorothy was absent from this session) and they were given an extra worksheet. This contained a story with parts of speech in place of some words:

> 'This is a tale about a 'adjective' man called Mr 'name' who lives 'adverb' in a 'adjective' house with a 'noun', two 'noun's and a 'adjective' 'noun'. He often 'verb' 'adverb' as he is an extremely 'adjective' person. Every morning he 'verb' and then 'verb' 'adverb' out of the window. On Sundays he 'verb' to his next door neighbour Mrs 'name' who 'verb' back to him.

The children recalled the story from a PAT2 library file and then instructed the program to complete the story by substituting words from its vocabulary for the appropriate parts of speech, e.g.: 'This is a tale about a sad man called Mr Periwinkle who lives stupidly in a tall house....'. They then made up a story outline of their own, to be filled in by the program. Both the girls enjoyed experimenting with this program and together typed in, unaided, the following outline: 'One day a 'adjective' 'noun' was walking in the 'noun' when she found a door. She went 'preposition' and saw a 'adjective' lady.'

It was clear from the first session onwards that Derek and Kevin were gaining little from the scheme. They appeared to regard the games and exercises as pointless and had little enthusiasm for operating the computer, often disrupting these sessions with loud conversation and horseplay. By contrast, the other children were enthusiastic, to varying degrees, about investigating language by computer. Dorothy in particular showed a marked improvement in interest and attention during the first part of the scheme. During session 10 the children were given a short written test of language skills (explaining grammatical errors and following syntactic patterns). Details of the test are given in appendix 1 and the scores (out of a total of 12) are shown in Table 2.

4. DEREK AND KEVIN

The test confirmed the impression that Derek and Kevin were having problems in following the teaching scheme and they were not taken on to the second part. Instead, they usually visited the Department at different times from the rest of the group and used the computer as a simple word processor, typing in text, altering spelling and then printing out a neat copy. They were still not

	Test Score
Dorothy	10
Louise	9
Sharon	5.5
James	5
Derek	3
Kevin	1.5

Table 2. Results of diagnostic language test.

enjoying the work and, rightly, suspected that the exercises were designed mainly to keep them quiet and occupied. On the penultimate session, however, they were asked to write a short contribution to the children's page of the local newspaper, on the theme 'Who I would most like to be'. For the first time some spark of interest gleamed and both boys applied themselves to the task, producing these passages:

> I would like to be Archie McPherson because I would like to see all of the football Matches. And I would be able to meet all the Football players and talk to them. And I would be able to get all the autographs and give them to my children. (Derek)

> I would like to be JR because of all the fame and fortune. Look at all the TV programes he has been on and he has made a lot of money out of that series. That is why I would like to be JR. (Kevin)

To their delight both offerings were printed in the newspaper and, encouraged by their class teacher, Derek wrote letters to other organisations, such as the BBC 'Blue Peter' programme.

5. CREATIVE WRITING

The four remaining members of the experimental group began work on the second part of the scheme, which applied their knowledge of language to creative writing. The worksheets covered two functional forms of writing - descriptive and narrative - and concentrated on particular stylistic or structural aspects, such as word choice, repetition, and imprecision. These were integrated with writing projects which led the child from simple descriptions to a narrative essay.

The first worksheet of the section (Worksheet 5) gives an introduction to the process of 'generate and select', described in chapter two. The worksheets began with words, rather than plans, in order to introduce the process through readily understood examples. Exercises to choose amongst story plans (for example a 'Story Maker' game described in chapter three would demand of the child a more abstract level of evaluation. Instead, planning is introduced at a later point in the scheme, when its purpose and operation are clearer to the children.

Worksheet 5 presents a short passage with a choice of words available at approximately every tenth word. At each of these points children select the word or phrase which best suits the story. The children worked in pairs and then compared results, in a lively discussion with plausible reasons offered for the word choices:

> I chose 'water' not 'ocean' because 'ocean' means its too far out to sea to anchor. (Dorothy)
>
> 'Seafarer' is better than 'sailor' because its old-fashioned and the picture is of an old-fashioned boat. (Louise)

For the next exercise, pairs of children carried out a similar process on the computer. A set of rules for the PAT2 program generated alternative versions of a ghost story. The children could select a sentence from the story and display as many versions as they wished (since a sentence may have up to 12 decision points, each with a choice of three words, the number of possible versions was large). Although the children were exhorted to be critical of the computer's choice of words, and to produce better alternatives, they generally wrote down one of those offered by the program. The exception was Dorothy who made up her own words (underlined below) to fit slots in

the following sentences:

> I was thinking about riding to my mate's house which was nearby. Then we would continue on to the stream and feed the horses.

The exercise was, in general, successful, though the children were required to make too many decisions and so sometimes became restless and lost the flow of narrative.

Worksheet 6 covers simple description. It begins with a game which asks children to create interesting descriptive sentences, avoiding their normal uninspired clutch of modifiers: 'big', 'nasty', 'horrible' etc. A PAT2 library file contains a series of rules which substitute an asterisk for an adjective and an exclamation mark for an adverb, for example:

```
big -> *
quickly -> !
```

As the program only recognises some 200 words, the purpose of the game is to 'outwit' the machine by inventing sentences with unusual modifiers which would not be substituted by the program. The worksheet gives core sentences to be embellished, for example:

> The aeroplane flew under the bridge.

The children all worked enthusiastically to produce such ornate sentences as:

> The acrobatic jet fighter went shooting under the huge, old fashioned railway bridge. (James)
>
> The young curious girl looked inquiringly at the old victorian house. (Dorothy)
>
> The elderly crazy looking man sat on the green bench

snoozing. (Sharon)

The old grey-haired man sat uncomfortably on the old uneven wooden bench. (Louise)

The game element of the program contributed to its attraction, particularly the opportunity it gave to 'beat the computer'.

The next exercise focusses on stylistic variations of a single sentence. The children are asked to devise versions of the sentence 'John sat down on the chair' which would describe John as 'happy', 'an old man', and 'a little boy'. The three girls all wrote sentences which contained descriptive verbs, adverb and adjectival phrases, for example:

John sighed happily as he sat down on the chair with a smile on his face. (Dorothy)

The little boy lay screaming when his mother hit him. (Sharon)

Old John sat down and lay back on the chair with his pipe. (Louise)

Of the three, only Sharon left out information contained in the core sentence. James misunderstood the task and wrote descriptions which bore no relation to the core sentence, e.g.:

A little boy called Ken went to a boxing contest and beat a boy called Garry King.

Throughout the project James, and to a lesser extent Sharon, were imaginative in their use of language but often could not, or would not, follow written instructions.

For session 13 the children were taken on a visit to the Edinburgh Waxwork Museum which not only gave them a break from the

worksheets and computers, but also provided a context for writing longer descriptions. They were told beforehand that the group would tour the museum and that each child should pick a single waxwork and make notes on it, from which a full description would be written the following week. The descriptions would be included in the class newspaper. The children were informally introduced to story planning, by being asked to take notes as an aid to memory.

The children all opted for waxworks in the Chamber of Horrors and assiduously wrote details of their dress, features and surroundings. All four children referred to the museum guide book for background information. During the next session the children were encouraged to study their notes and reorder them to improve the flow and logic of the description (unfortunately, the author omitted at the time to give them details of how the flow and logic should be improved). Dorothy and Louise wrote three versions of their descriptions, Sharon four, and James five - of their own volition, in order to produce acceptable copy for the newspaper.

Sharon first summarised an article in the museum guide book about a local murderess and then inserted her own description of the waxwork. Although she took sentences intact from the handbook, she selected the most relevant parts from a long (580 word) article. During the redrafting session the children were introduced to a thesaurus, in book form, and encouraged to ask for synonyms of overused words. Sharon used the thesaurus both to simplify and to embellish text from the handbook, changing 'good looking' to 'handsome', 'impoverished' to 'poor', 'hard' to 'strenuously' and 'poor' to 'unprosperous'. An extract from the museum guide book and

the whole of Sharon's article are given below.

> Alleged murdress. She was born in Glasgow, the eldest child of a prosperous architect, and educated at Clapton, near London.
>
> When she was 18 she was introduced to a good-looking but impoverished channel Islander, Pierre Emile L'Anglier, then employed by a Glasgow seed merchant. The two quickly struck up a romantic attachment, but Emile was hopelessly ineligible, and Madeleine's father, when he found out about it tried hard to end the affair. (Museum Handbook).

> Madeleine Smith, was a murdress. When she was 18 she was quite plump and not very nice looking. She had dark hair and was dressed in black and a white frill around her head. She had light green eyes and a chubby nose, and black eyebrows. She looked quite plain. She was introduced to a handsome but poor channel islander called Pierre Emile L'Anglier then employed by a Glasgow seed merchant. The young couple fell in love they had a romantic affair. Madeleine Smith's father did not like Pierre, because he was an unprosperous man and he tried very strenuously to stop their affair, But her father could not stop them and so they met secretly in Glasgow and in the country cottage. Madeleine Smith, killed Pierre because she met another man called Minnoch, and Pierre, got jealous because he was in love with her. So in the end she invited Pierre, around for tea and poisoned him. (Sharon)

For her article on the waxwork, Louise extracted the salient facts from a 450 word passage in the museum handbook and restated its more flamboyant sections in her own concise style. For example, she compressed 48 words into 25, with little loss of detail:

> Briefly, it was their custom to lie in wait by the public highway to attack and kill passers-by, and then consume their bodies and use their belongings as best they could. What they could not eat at once they pickled in brine and preserved for future use. (Handbook)

> They were cannibals and they ate anyone who came by. If they were full they put what they had left in a jar and pickled it. (Louise)

She included no description of the waxwork, however, nor did she add any of her own observations to the precis.

James did not describe his chosen waxwork (a werewolf) either, but offered a precis of the werewolf legend, mixing information from the museum handbook - 'In 1940 Lon Chaney Jr in 'The Wolf Man', gave the first of many impressive performances in the part' - with his own knowledge. The first draft consists of a series of disconnected statements:

> The Werewolf.
>
> Half man half wolf.
>
> in the films Lon Chaney plays the half man man and wolf. The werewolf is always frenzied when it kills. It appears on a full moon. It is not the thing you would like to meet in a dark alley at night. It has vampire teeth. It comes from an unknown origin. If you get bitten you turn into it. If you drink water from wolfs footprints, Well its hard lines for you.You can kill it with a silver bullet. He's got hair allover.

In revising, James reordered the statements adding an explanatory sentence to the start and moving information of lesser importance - 'Lon Chaney plays the evil spirit' - towards the end. The words 'beast' and 'evil spirit' were substituted for 'werewolf' and the text shows signs of a consideration for vocabulary, in the adjective pair 'dreadful gory':

> The Werewolf
>
> The werewolf is half, man half wolf. It is really a legend but not all the time. Some people have been found with claw marks all over then. Some times people have survived the dreadful gory attack. If your scratched, you'll turn into a werewolf, or if you drink from wolf's footprints, it's hard lines for you. In the film Lon Chaney plays the evil spirit. The beast comes from an unknown origin. The beast first appeared in 1929. It devours its victims by tearing them to pieces. It's hairy and it's got sharp teeth.

Dorothy made considerable changes to her initial draft. She

compressed jumbled and repetitive notes on her observations of the waxwork and padded out a two sentence entry in the museum guide book with her own imaginings. The first draft and the version printed in the newspaper (version 3) are given below:

Hook Victim

> Yuch,
> The hook is through his stomach. his tongue is hanging out there is blood coming down from his mouth.
>
> This was an Algerian divice. The victim was impaled upon a hook and left hanging in the open until he died.
>
> This man's body was in pain the hook was right inside and back out again.
> The mans face was a horrible looking face his tongue was hanging out and his eyes were blood-shot, and were half hanging out of his head. he is lying with the hook in the front of his stomace and he is not balanced on (First draft)

The Hook Victim

> This man must be in pain there is a hook through his stomach. His tongue is hanging out. His eyes have turned white and have red lines through them. He would not give evidence against the person he was working for. So he was given as much time as he wanted to make his mind up. But the police got fed up waiting so they took the victim into the open and left him hanging until he was dead. He was left hanging with a hook through him. He had nothing to balance on except his legs, but even they were rotting away. (Final Version)

At sentence level she apparently found difficulty in combining the present tense of her observations with the past tense of the guide book, but solved the problem by changing the tense of the end description to fit the preceding sentences: 'He has nothing to balance him except his legs and they were rotting through' (version 2); 'He had nothing to balance on except his legs, but even they were rotting away' (version 3). In chapter two we suggested that deletion of text in successive redrafts may be one indication of a mature

writer and, of the four children, only Dorothy rejected substantial sections of text in redrafting.

Worksheet 7 provides exercises in punctuation and was written mainly to exploit the capability of the PAT2 program to remove punctuation from a passage. The children worked in pairs. One typed a passage to the computer, which then removed all punctuation; the other child then attempted to rewrite the passage with punctuation restored. The worksheet was ill-conceived and ill-timed. Punctuation is an important aspect of language use, but it should not have been introduced at this point, breaking the progression of the scheme from sentence to story.

All six children spent the next four sessions (sessions 17 to 20) in producing another issue of the newspaper. It contained the descriptions of the waxworks, plus interviews with staff members of the Department (the staff were most tolerant towards children who accosted them for details of research projects, and they provided some quite revealing information). Again the children worked in pairs: Kevin and Derek; Dorothy and James; Sharon and Louise. Dorothy was appointed editor, and she clearly understands the function of an editorial:

> This magazine is a better one than last time. It is more interesting and has more stories and features than last time. Some of the characters are from the wax works the characters are The Were-wolf, Sawney Beane and The Hook Victim.

Sharon prepared questions in advance for an interview with a member of staff and was the only one of the six children to record an interview in note form:

What are you doing? LOGO project
How long have you been here? 3 yrs on 28th
Do you like what you are doing? yes
Use computer LOGO to help children with maths mainly 11+12+13
Terak small computer All on its own no need to go to the big computer.
Need programmers to type in. I write down sheet. Froppy discs
to type in to computer and tapes it like a tape recorder. Take into
school in May. Just to Glespies. cost about 5 thousand.
Not in 5yrs but maybe eventually.

She then expanded these notes into an article:

Fran Plane

Fran is working on a logo project she has been there for 3yrs on the 28th of February she enjoys what she does most of the time.

She uses Logo computer to help children with maths mainly 11,12,13 year olds. There is three people doing this project Fran Plane, Peter Ross and Ken johnson. Terak is the small computer which the are taking to James Gillespies. The terak computer is square with a box like shape and at the side it is where you put in the floppy disc. The floppy disc is like a record it tells the computer what to do. The computer cost about 5,000. This may eventually go to other schools. Fran makes up the worksheets for the people who are using this Terak computer.

Session 21 brought in the importance of audience to descriptive writing. James was absent, so Sharon and Dorothy worked together and Louise worked alone. Each team was shown two different photographs (one black and white, and one colour) and asked to write descriptions of them. The descriptions were passed to the other team who attempted to redraw the picture. If a team had problems in following the description then it was passed back to be redrafted. This exercise provoked a useful discussion about a reader's knowledge and about descriptive completeness. The description by Sharon and Dorothy of their colour picture (a illustration of a Martian monster from a science fiction comic) omitted any mention of colour, and Louise complained that she could not draw the picture as she had no idea of

which coloured crayons to use. Both groups caused protest by leaving out the size and orientation of parts of their pictures. The discussion led to a list on the blackboard of ingredients for descriptions, which included colour, size, and shape.

Up until this stage in the scheme the children had produced every piece of writing longhand, using the computer only for games and exercises. They were now taught to use the WALTER program as an aid to drafting and revision. Worksheet 8 gives an introduction to the program, with simple exercises to input and alter text. The children found no problems in using the program and welcomed the opportunity to revise text without defacing the page or rewriting an entire passage. Sharon remarked 'It's good. You can make as many changes as you want and you always get a neat one at the end'.

For the next exercise in descriptive writing the children looked round the author's office (for some inexplicable reason they had clamoured to see the office throughout the project) and then wrote a description of it and its contents. All the children itemised the contents, but made little or no attempt to evoke the atmosphere of the room (cluttered and untidy). Louise, for example, wrote:

> Mr Sharples room is quite small, it is square with a sort of cubby-hole which is about the size of a cupboard, it has 2 filing cabinets and 2 big desks and 2 big chairs. It has lots of photos, it also has 7 computer printouts. It has bookshelves in the cubby hole. It has a big telephone lying on the wall. It has a sink, and on the ceiling it has a long light.

This was to be expected, given the emphasis on detail in the previous exercise, and the author explained the difference between the two types of description, suggesting that, if a description is to provide

the reader with a general impression rather than a detailed picture, it should concentrate on atmosphere and unusual features.

A thesaurus program can be called from within WALTER, and this feature is illustrated in Worksheet 9 by means of a 'synonym game'. The players work in pairs. One person thinks of a common word which is typed to the computer. In the 10 seconds, or thereabouts, that the program takes to reply with a list of synonyms, the other player must write down as many related words as possible. One point is scored for each related word and two points for one which in not in the program's thesaurus. The children used their own judgement about whether a word was related or not. The aim was not for them to produce strict synonyms, but to generate words for a concept.

This game proved popular with the children, due again to the opportunity of beating the computer. As an example, Sharon's list is given below:

WORD	SYNONYMS
baby	small, young
paper	pad
teacher	-
floor	-
sky	blue, cloudy
space	stars
tie	fasten

A test presented in the second part of the worksheet required the children to match words to their synonyms and the table below shows the children's scores (out of a total of 22):

Louise	5
Sharon	4
James	5
Dorothy	7

Dorothy's score was surprising, given the teacher's comment that she had 'no exposure to books at home'. She identified, for example, 'shrewd' as a synonym for 'clever', and 'tarry' and 'linger' as synonyms for 'stay'.

The final worksheet, entitled 'Lazy Words', covers imprecision in writing. After an introductory exercise to rewrite a description, replacing each occurrence of 'thing' with a more precise word, the children used a series of transformation rules in the WALTER program, the 'thing' rules, which show the consequences of imprecision in writing. These rules alter all the nouns in a piece of text to 'lazy words'. The sequence below shows it in operation:

```
W: new

STORY: Once there was a pretty princess who lived in a
STORY: big castle in a dark forest. She was very lonely
STORY: because she had no friends to play with.
STORY:

NEW FINISHED

W: try

OLD WORDS:

RULES: thing

**************************************************************

Once there was someone pretty who lived in something big in
something else which is dark. She was very lonely because she
had no people to play with.

**************************************************************

W:
```

Working in pairs, one child recalled her description from file and

applied the 'thing rules' to it.[1] The other child then looked at the resultant text and tried to reconstruct the original piece.

A transformation of, for example, 'Mr Sharples room is quite small, it is square with a sort of cubby-hole which is about the size of a cupboard' into 'Mr Sharples thing is quite small, it is square with a sort of thing which is about something of a thing.' gives an entertaining illustration of the effect of imprecision, particularly since it operates on the child's own writing.

The children all modified their descriptions by, for example, changing 'room' to 'office' (Sharon) and 'window which faces the graveyard' to 'window which faces Greyfriars Bobby's Graveyard' (Dorothy). They were still learning to operate the program, however, and so the changes were minor and generally confined to improving grammar, spelling, and punctuation., for example: ' it has 2 filing cabinets and 2 big desks and 2 big chairs' to '2 filing cabinets, 2 big desks and 2 big chairs' (Louise).

For the final part of the scheme, the children progressed from simple descriptions to a descriptive environment and then to a narrative, with the aid of the FANTASY program. The role of FANTASY is to provoke discussion of plans, goals and strategies in a story plot, and to provide the bridge between static description and dynamic narrative. The FANTATSY network of ordered descriptions acts as a story plan, and the stories arise naturally, as the children play the game and explore the network. For this project, the author

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[1]Between session the 'lookup' procedure had been applied to every piece of children's writing, so that they were ready for syntax transformation rules, such as 'thing'.

deliberately gave little assistance to the children in forming their individual descriptions, concentrating instead on the links between them and the structure of the environment.

In order to understand the task the children (except for Sharon, who was absent) first played 'Adventure', a simulation game similar in structure to FANTASY. After some 25 minutes of playing the game the children were prised away from the terminals. The author explained that they could create their own Adventure game, from descriptions of rooms, characters and treasure, and suggested 'a haunted house' as the setting. Dorothy and Louise together drew a plan of a house, with nine main rooms and many connecting doors, hallways and secret passages. They then wrote, in note form, descriptions of three of these rooms. Their description of the hallway, for example, read:

Hallway

long straight hallway, brown oak walls, old victorian pictures.

James, working alone, made slow progress but, by the end of the session, had drawn a plan and written one description:

Guest

You are shown to the guest room there is one big oak brown 4 posted bed. You try to get to sleep, you here rats scratching and wolves howling. You go to the kitchen for water.

The author then reiterated that the writing should be descriptive only, movement would arise from playing the game, and that the children should compose five separate pieces of text for each room: the name of the room; a description of the room and its

furniture; descriptions of the objects, if any, in the room; descriptions of the characters, if any, inhabiting the room at the start of the game; descriptions of the doors to adjacent rooms. Lastly, they could, if they wished, describe incidents which might occur at any point in the game, such as: 'You are attacked by a bat'.

Dorothy and Louise arrived the next session with, quite unexpectedly, details of the rooms and their contents, covering 8 sides of A4 paper. Some were still in note form:

> Hallway - Long straight hallway, brown oak walls, hanging on walls old victorian pictures, a telephone table, chair.
>
> Things
>
> Pen on table.
>
> Torn out page of diary 'August 14th 1901'
>
> Exits
>
> front door, study door, cellar, Emporium, bedroom door, bedroom door, bedroom door, living room, kitchen, larder, dining room, all of hall.
>
> People
>
> Butler on chair sleeping.
>
> Events
>
> Butler has wakened up do you want to run.

Others were more extended:

> Living
>
> Bright coloured happy atmospheric room, in it there is, two big

> lounging chairs bright fabric but damaged, a sofa to match chairs, a coal fire still burning, a glass coffee table smashed to pieces. A note say "Have a glass of wine". Keys to cellar lie beside it, ripped victorian pictures are hanging on walls, pinned to wall is a page of diary dated April 10th.

This room description continued by itemising the objects, exits and entrances, events, and people, including a 'corps on sofa'. The children assured the author that they had devised and written the pieces themselves. In both vocabulary and phrasing the girl's combined Fantasy environment is richer than any of their previous writings. It contains the words 'atmospheric';'clammy';'emporium', and the phrases 'filled with a cold, misty fog'; 'a wardrobe to match'; 'ripped victorian pictures' all of which indicate a use of language for dramatic effect.

Dorothy and Louise began to type the descriptions to file, using the WALTER program. Sharon and James, meanwhile, rewrote the descriptions which James had begun the previous session and added some further ones, although linked by narrative, for example:

> There is a house on the door is a sigh on the door saying rooms available it is a dark and cold night.
>
> You are in a hallway with a waiting room.
>
> You can't go in there is a sigh saying closed go straight into dining room Dinner is being served. In the dining room there is people eating food they tell you to sit down they all went to bed you go too.

Dorothy and Louise typed in the majority of their room descriptions (abbreviated from the originals, though in full, not note, form) during the session and Sharon and James completed longhand

descriptions (mainly single sentences) of nine rooms.

During the following week the author converted the children's specifications into an input file for FANTASY. This involved inserting between descriptions lists of integers which specify the linkages between the rooms, the ease of passage through the doors, and properties of the characters and objects. Louise and Dorothy had produced a complete plan and inventory of their house, though for some rooms they had intermixed descriptions of furniture and objects. The author separated these but otherwise copied their text verbatim to the FANTASY file. The productions of Sharon and James required some interpretation, to separate the rooms and remove narrative, but the content and grammar was left unchanged.

When the children returned they first examined a printout of their FANTASY files and suggested minor changes. They then played both versions of the game, their own and the other group's. As values are associated with each piece of treasure, the session became a contest to collect the most valuable hoard of treasure. An extract from each game (run by the author on a later occasion) is given in appendix 2.

After playing the game, the children discussed their experiences, and this led to an examination of goals and strategies. Thus, the goal of the explorer is to find hidden treasure and the goal of the inhabitants is to attack the explorer. Strategies for finding the treasure include:

(1) Try the doors which are the most difficult to enter, since these may lead to secret passages (the FANTASY doors are given

numerical weights indicating difficulty and a player may need to make a number of attempts to pass through a difficult door).

(2) Explore at random

(3) Stay in one room, wait until characters arrive in it with treasure, and attack them.

Similarly, when creating the house and hiding the treasure, various strategies are available:

(1) Create a house with secret passages leading to treasure.

(2) Hide the treasure at the opposite end of the house to the entrance.

(3) Create small pieces of treasure (in FANTASY each object has an associated numerical size and the smaller the size the more attempts are needed to discover it).

In the two subsequent sessions the children wrote narrative stories based on their experiences of playing FANTASY. Dorothy and Louise worked together, with Louise as writer and Dorothy providing ideas and criticism, while Sharon and James wrote separate stories. An introductory talk by the author about narrative flow and the need for events to follow in a logical order, generally of event or place, led Dorothy and Louise to refer to their plan of the house and to draw a line on it indicating the explorer's progress through the rooms.

The stories were first handwritten and then typed to the WALTER program. As the time to the end of the experiment was limited, the

author finished the typing of each essay (though retaining the children's spelling and grammar) and provided a printout of each, with comments on style, organisation, spelling, and grammar. These comments merely indicated problems - for example word repetitions, or an abrupt ending. Apart from giving the correct spelling of a word they did not suggest ways to improve the text. All four children made revisions, substituting words and adding new sections. They also referred to the computer thesaurus, looking up such words as 'house' and 'walk'. A copy of the first version of each story, with the children's own annotations is included in appendix 5. The appendix also contains each final version.

James' story relies on stock images from horror films - butler; blood-covered nail - but, unlike his 'Adventure While Travelling' essay, it is fleshed out with details of character and setting:

> 'a poor old man appeared. He said to them in a stubborn croaky voice...'
>
> 'The wall had plain whitish wall-paper, but it was a bit grotty with cobwebs and dust'.

The pace is less frenetic and the narrative links a series of coherent episodes, each set in a different room and sustained across a number of sentences. The first version had an abrupt ending; after revision the story ends in a slightly less preremptory fashion, but only by the use of a conventional add-on conclusion:

> Then suddenly he woke up in his bed in his tent and there beside him was his sleeping friend. So all the werewolves, the castle and the blood were just one big dream.

Care and deliberation is shown in the choice of adjectives, both single - 'windey'; 'solid'; 'squeaky' - and in combination -

'stubborn, croaky'; 'plain whitish'. James made a few changes to vocabulary in revision, replacing repeated occurrences of 'old' (the repetition had been indicated to him, though not the possible substitutions) by 'ancient' and 'elderly'.

Sharon wrote the first draft of her 'Haunted House' story in haste, spilling ideas and impressions onto paper. This 'stream of consciousness' style is very different from her previous writings. Given the content of the story, a solitary exploration of a haunted house, the style is appropriate and represents a transition towards 'poetic' use of language. That this is deliberate, and not merely the result of haste, is indicated by the subsequent revisions. These are substantial, but do not alter the overall style. Sharon rewrote and expanded the first section, added punctuation, and altered words and phrases: 'strange' to 'weird'; 'went' to 'ran'; 'I've fell' to 'I've fallen'; 'he has no head' to 'he's headless'; 'The pit is filled with...' to 'I try to escape everywhere I look there is...'. The revisions, and the choice of words and phrases to describe the house - 'on the verge of tumbling down'; 'its eerie'; 'overgrown with leaves'; 'everything is in pieces' - indicate a control of language at the word and phrase level.

Dorothy and Louise constructed their joint 'Haunted House' story around the FANTASY environment, but included few of the game's descriptive passages. Some, though, the description of the dining room for example, have been transported almost unchanged to the story. The children spent some time in devising an ending for the story and drawing the scroll, with the result that the text was written in some haste, to complete a draft by the end of a session.

When this was pointed out to them, the girls rewrote the final section, adding details of the scroll and two concluding sentences. They also made substantial sentence level revisions to the start of the story and, with the aid of the computer thesaurus, replaced two occurrences of 'big', five of 'walk' and one of 'goes' with suitable synonyms.

6. FINAL ESSAYS

The author set two essays for both experimental and control group children. For the narrative essay the author drew an outline of an island on the blackboard and then asked the children to suggest details which would fill in the map, for example a mountain, streams, a harbour. The author then suggested to the children that they were stranded on the island and should write a story about their adventures. For the descriptive essay the author asked the children to write a description of an exciting and colourful fairground.

7. CONCLUSIONS

The monitoring of the children's activities and attitudes to the teaching scheme has generally confirmed expectations. The children formed two distinct groups. Two of the children would only tackle a worksheet if given constant assistance. In part, they were being deliberately disruptive, making a bid for leadership of the group, and they may well have made more progress if left to themselves. Clearly though, they gained little from the scheme. They were certainly not overawed by the computers; both boys were eager to show their skills at computer arcade games. Nor were they illiterate; both wrote extended pieces of more than 150 words. To them, writing

was an intuitive act and linguistics, however attractively presented, was irrelevant.

The remaining four children followed the scheme without undue problem. Their questions were almost entirely on language use or the writing topic, rather than how to operate the computer. Having followed the children through the teaching scheme, and shared their excitement and frustrations, it is difficult to judge their attitude towards the experiment. They certainly found sections of the scheme to be tedious and difficult, especially the second worksheet, but the fact that they were each prepared to produce several complete redrafts of articles for the newspaper, without being goaded, that Dorothy and Louise produced the Fantasy outlines at home, and that all four children had to be persuaded to leave the Fantasy game and return to school, suggests that they generally enjoyed the activities.

When first encouraged to revise their drafts (of the waxwork descriptions), without guidance as to desirable changes, the children responded in different ways: Louise merely wrote a draft and then made an identical neat copy for the newspaper; James altered the sentence order, added text at the start and made word substitutions; Sharon combined two sections (her description and the precis of the museum handbook), extended the article and substituted words; only Dorothy carried out deletions and syntactic transformations of text during a substantial rewrite of the initial draft.

Their next major piece of writing, the 'Haunted House' story, came after exercises in descriptive writing, redrafting, and text organisation. The three stories were imaginative, with structure and

detail derived from the FANTASY environments. The drafts were returned with written comments and indication of the sections in need of revision and expansion. All the children made substantial revisions, with the possible exception of James who, asked to write a more fitting conclusion, merely extended the story. Sharon concentrated on extending the vocabulary, while Louise and Dorothy made changes at all levels, substituting words, strengthening the sentence structure, and revising the ending.

We can conclude that techniques for generating, transforming, and selecting text can be taught to eleven-year-old children, providing they have reached a stage of language rule knowledge, that they can apply the techniques to their own creative writings, and that a computer can aid the process of planning and revising text.

CHAPTER 8

EVALUATION OF THE ESSAYS

Chapter seven was concerned mainly with the children's process of writing; this chapter concentrates on the writing product. The children produced a descriptive and a narrative essay at the start of the investigation and two similar essays after the final teaching session. The control group of five children produced essays on the same subjects. The essays have been assessed by two methods - the impressionistic judgements of two independent English teachers, and an analysis of linguistic features - and the results are presented in this chapter.

1. TEACHERS' ASSESSMENT

Each child's pre and post essays were marked by two independent teachers, on a scale of 1-7 for 'general impression' and in four analytic categories - 'content'; 'organisation'; 'appropriateness and style' and 'grammatical conventions', on a scale of 1-5. Table 1 shows the 'general impression' marks for each assessor. Blanks in the table indicate that a child was absent.

The most obvious feature of the table is that assessor A marked higher; the mean difference is 1.2 marks. A Spearman test on the rankings for each essay shows a positive correlation between the two assessors, but at significance level ($p<0.05$) only for the 'Visit to the Department' and the 'Fairground' essays. Since the correlation is weak we shall consider the data from the two assessors separately.Table 2 shows the rankings from each assessor, based on

	Visit		Adventure		Fair		Island	
	A	B	A	B	A	B	A	B
Nigel	4	3			5	4		
Louise*	4	3	3	4	4	2	5	4
Kevin*	2	1	5	3	3	3	4	2
Dorothy*	5	3	4	3	6	5	7	5
Derek*	3	2	2	2	3	2	4	2
Anne	5	2	5	4	5	5	7	4
Richard	3	1	2	2	3	2	4	3
Robert	6	4	2	3	4	5	6	6
James*	3	2	3	3	5	3	6	3
Sharon*	5	2	5	4	5	5	3	5
Saras	5	2	4	2			6	5

Table 1. 'General impression' marks from both assessors for pre/post essays.

the combined marks in pre and post essays. A cross indicates that the child was absent and the ranking is based on performance in one essay.

A Wilcoxon test shows significantly higher post test scores, from each assessor, for the eleven children ($p<0.05$)(two tailed). To

	Assessor A		Assessor B	
	Pre essay	Post essay	Pre essay	Post essay
1	Anne	Dorothy*	Louise*	Robert
2	Sharon*	Anne	Robert	Dorothy*
3	Dorothy*	James*	Nigel+	Sharon*
4	Saras	Nigel+	Dorothy*	Saras+
5	Robert	Saras+	Anne	Nigel+
6	Nigel+	Robert	Sharon*	Anne
7	Louise*	Louise*	James*	Louise*
8	Kevin*	Sharon*	Derek*	James*
9	James*	Derek*	Kevin*	Kevin*
10	Derek*	Richard	Saras	Richard
11	Richard	Kevin*	Richard	Derek*

Table 2. Rankings for 'general impression' category.

discover whether the experimental group made the greater gains, the difference between pre and post test scores was calculated for each child and a Mann-Whitney test was carried out on the ranked data. The test revealed no significant difference, from either assessor, between the two groups ($p<0.005$)(two tailed). Interesting trends, however, are shown in the relative performances of the individual experimental group children.

Of the four experimental group children who completed the scheme, Dorothy gained in rank placing from both assessors during the investigation (3= to 1; 3= to 2=), James gained in ranking from assessor A (9 to 3) and remained at 7th position from assessor B, Sharon dropped (1= to 8) according to assessor A and rose (3= to 2=) according to assessor B, and Louise dropped in position according to both assessors (6= to 7; 1= to 7=). The two assessments of Sharon's 'Island' essay differ markedly: she is ranked second equal by one assessor and tenth by the other. This is the only instance, from all the children's essays, in which the ranking for a single essay differs by more than five places between assessors. If Sharon is rated on the basis of the 'Fairground' essay only, her post-test ranking is second equal from assessor A and first equal from assessor B.

Table 3 shows the marks from each assessor for the four analytic categories. The two categories most relevant to the scope of the experiment are 'organisation' and 'style', so the marks for these categories have been added for each assessor to produce table 4. For these categories, the mean for assessor A is, on average, 1.1 marks higher than for assessor B. Dorothy's ranking is consistently high

VISIT

	Content	Organ-isation	Style	Grammar
Nigel	4:2	4:2	4:2	3:2
Louise*	3:3	3:3	3:2	2:2
Kevin*	1:1	2:1	2:1	2:2
Dorothy*	4:3	4:2	4:2	3:2
Derek*	3:2	3:2	3:1	2:1
Anne	4:2	4:2	4:1	3:2
Richard	3:1	3:1	2:1	3:1
Robert	4:3	4:3	4:2	4:2
James*	3:2	2:2	3:1	3:2
Sharon*	4:2	4:2	3:1	3:1
Saras	4:2	4:2	3:1	3:1

ADVENTURE

	Content	Organ-isation	Style	Grammar
Nigel				
Louise*	2:3	3:2	3:1	2:1
Kevin*	4:2	4:1	4:2	3:1
Dorothy*	3:3	4:3	3:2	4:2
Derek*	1:2	2:1	2:1	2:1
Anne	4:3	3:3	3:3	4:2
Richard	2:1	2:2	3:1	2:1
Robert	2:2	1:1	2:2	2:1
James*	2:2	2:2	3:2	3:3
Sharon*	4:3	4:3	4:2	3:2
Saras	3:2	3:2	3:2	3:2

FAIR

	Content	Organ-isation	Style	Grammar
Nigel	4:2	3:3	4:4	2:2
Louise*	3:2	3:2	3:2	3:2
Kevin*	3:2	2:2	2:2	1:1
Dorothy*	5:4	4:4	5:3	
Derek*	3:2	2:2	2:1	2:1
Anne	4:4	3:4	3:5	3:4
Richard	2:2	3:2	2:1	3:1
Robert	3:4	3:3	3:4	3:2
James*	4:3	3:2	3:2	3:2
Sharon*	4:4	3:3	3:4	2:3
Saras				

	ISLAND			
	Content	Organ-isation	Style	Grammar
Nigel				
Louise*	4:3	4:3	3:2	3:3
Kevin*	4:3	4:2	3:1	3:3
Dorothy*	5:4	5:3	5:4	4:3
Derek*	3:2	3:1	3:2	3:2
Anne	4:4	5:3	5:2	4:3
Richard	3:3	4:2	4:2	4:3
Robert	5:4	4:4	4:3	5:4
James*	5:3	5:2	4:2	5:2
Sharon*	2:3	1:3	2:4	1:1
Saras	4:4	5:3	4:3	4:2

Table 3. Analytic scores from each marker for pre/post essays.

	Assessor A		Assessor B	
	Pre essay	Post essay	Pre essay	Post essay
1	Nigel+	Dorothy*	Anne	Dorothy*
2	Dorothy*	Nigel+	Dorothy*	Anne
3	Sharon*	Anne	Sharon*	Robert
4	Anne	James*	Louise*	Sharon*
5	Saras	Saras+	Nigel+	Nigel+
6	Kevin*	Robert	Robert	Saras+
7	Louise*	Louise*	James*	Louise*
8	Robert	Richard	Saras	James*
9	Derek*	Kevin*	Kevin*	Kevin*
10	James*	Derek*	Derek*	Richard
11	Richard	Sharon*	Richard	Derek*

Table 4. Rankings of combined 'organisation' and 'style' categories.

(1= to 1; 1= to 1=), The assessments for the other children are contradictory. Louise holds her rank position according to assessor A and drops according to assessor B (7 to 7=; 3= to 7). The rankings for assessor A show Sharon dropping, from 1= to 11 and James rising, from 9= to 4=; the rankings for assessor B show Sharon rising, from 3= to 1= and James dropping, from 7= to 8.

2. CONCLUSION

As anticipated, the overall performance of the experimental group was not significantly different from that of the control group. Not expected was the assessors' lack of accord on the performance of individual children from the experimental group, particularly in the 'style' and 'organisation' categories. The assessors were in accord about the performance of Dorothy - she maintained her high rank position - but they differ markedly in their judgements of the essays by the other three children. In the combined 'style' and 'organisation' categories, no child from the control group moved by more than two rank positions from pre to post essay, yet the rank positions of Louise, Sharon, and James all altered by between four and ten places, in different directions and from different assessors. Whenever the rankings of one assessor show a large pre to post movement for a particular child, then the rankings of the other assessor show no movement, or a small shift in the opposite direction.

We can infer from these results that the three children acquired new writing techniques during the investigation, which affected the style and organisation of their essays. However, this type of evaluation cannot indicate the particular techniques they acquired, and the assessors differ over whether the children have successfully incorporated them into a general writing style. Global judgements are useful for identifying changes in the quality of a child's writing, from a range of samples over a long period of time but, as suggested in chapter two, other measures are needed for short term analytic assessment.

3. FEATURE ANALYSIS

Most of the space in this section is devoted to an assessment, by the method of feature analysis, of the essays from the four children who completed the second part of the teaching scheme. For comparison, a brief account is given of the essays by the remaining seven children.

3.1. James

James' first essay, 'A Visit to the Department' is repetitive and disjoint, two features of an immature writing style. Four of the ten sentences are introduced by 'there was' and the descriptions are mostly in arbitrary order, hopping between items in the room - TV cameras; board; arms; computers; TV cameras; box; board - and then jumping to an account of the fire alarm. Neither the vocabulary, nor the syntax, shows any sign of a considered use of language.

The second essay, 'Adventure While Travelling', written at the start of the project, comprises three distinct episodes, on the common theme of 'martian invasion':

(1) The first martian visit.

(2) The second martian visit.

(3) Martians invade earth.

All three episodes have common elements: the plots are similar (martians attack and are defeated); structural complexity is provided by a problem, whose solution (or non-solution in episode 1) resolves the plot. The episodes are fairly coherent, with few nodes missing

from the networks, and show some evidence of planning, but they rely on conventional scripts or, when these expire, a 'what next' composing strategy. Each episode follows a more compressed time scale than its predecessor and is set on a larger stage, a pattern often seen in immature schema-directed writings.

The first episode is tightly constructed around an irony, (Figure 1) - the martians' meanness is the cause of their downfall - a control of plot which is lacking in the second episode. This begins by following a search/escape schema and then degenerates into a chain of statements, leading to an ad hoc conclusion (Figure 2). The final episode fits a simple problem/solution schema. Each episode follows a more compressed time scale that its predecessor and is set on a larger stage.

The vocabulary and imagery is comic book science fiction - 'earthling'; 'The little martians were green, with big heads' - which suggests that the plots come from these sources. Certainly the third episode is familiar fare. At sentence level the text is spare and fragmentary, with no novel constructions, but it does contain some mature reflective commentary: 'to my surprise'; 'I was feeling nervous'. The mixture of mature and immature features at all levels suggests a state of transition: James has some control of language, but lacks technique.

The sentence construction of the 'Fairground' essay (written at the end of the teaching scheme) is repetitive. Five out of the eleven sentences begin with 'There was' or 'There were' and, as with the 'Visit to the Department', the ordering of these is arbitrary. At word level the vocabulary is more varied and contains some adjective

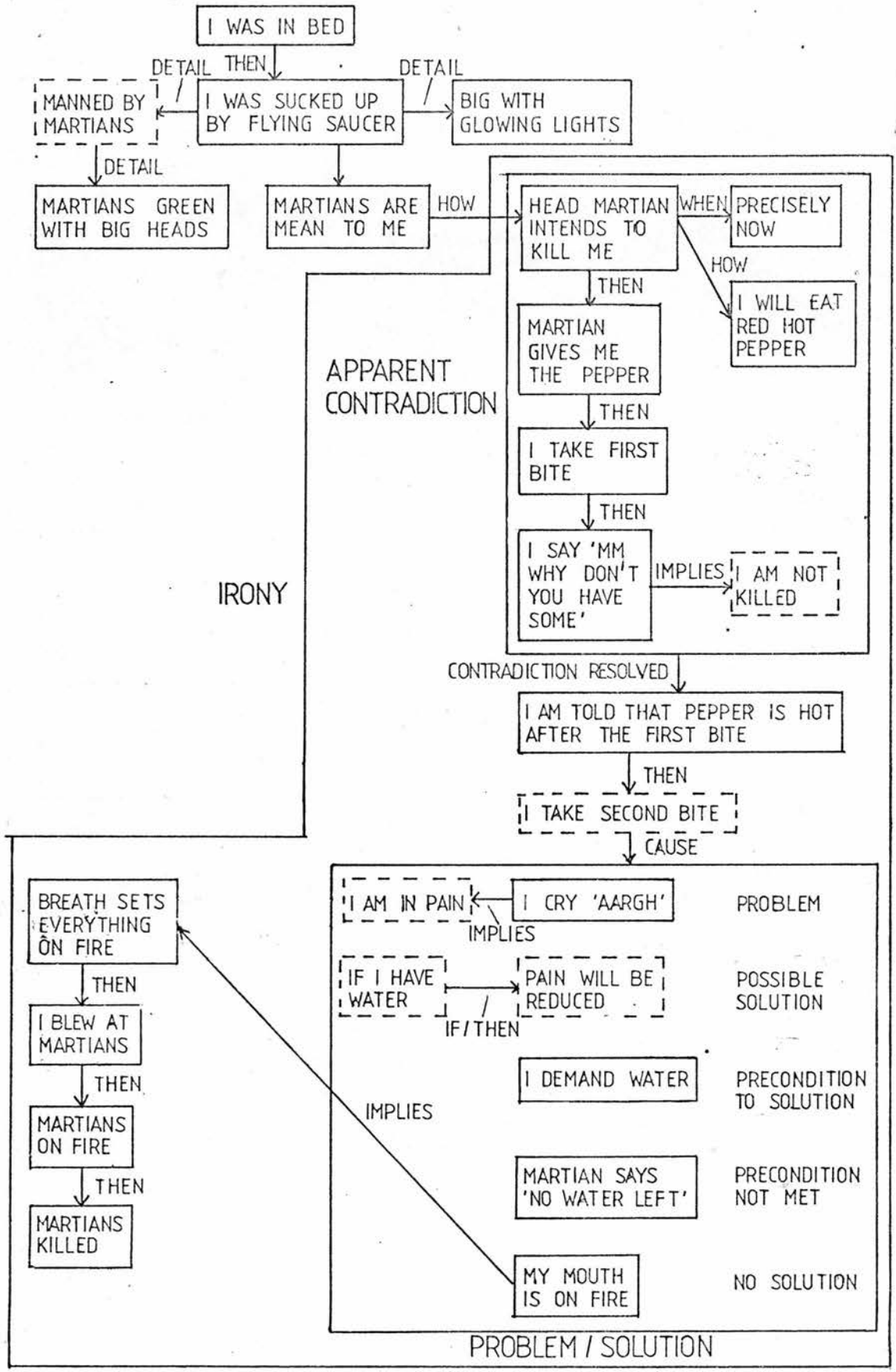


Figure 1. Network of James' 'Adventure While Travelling', first section.

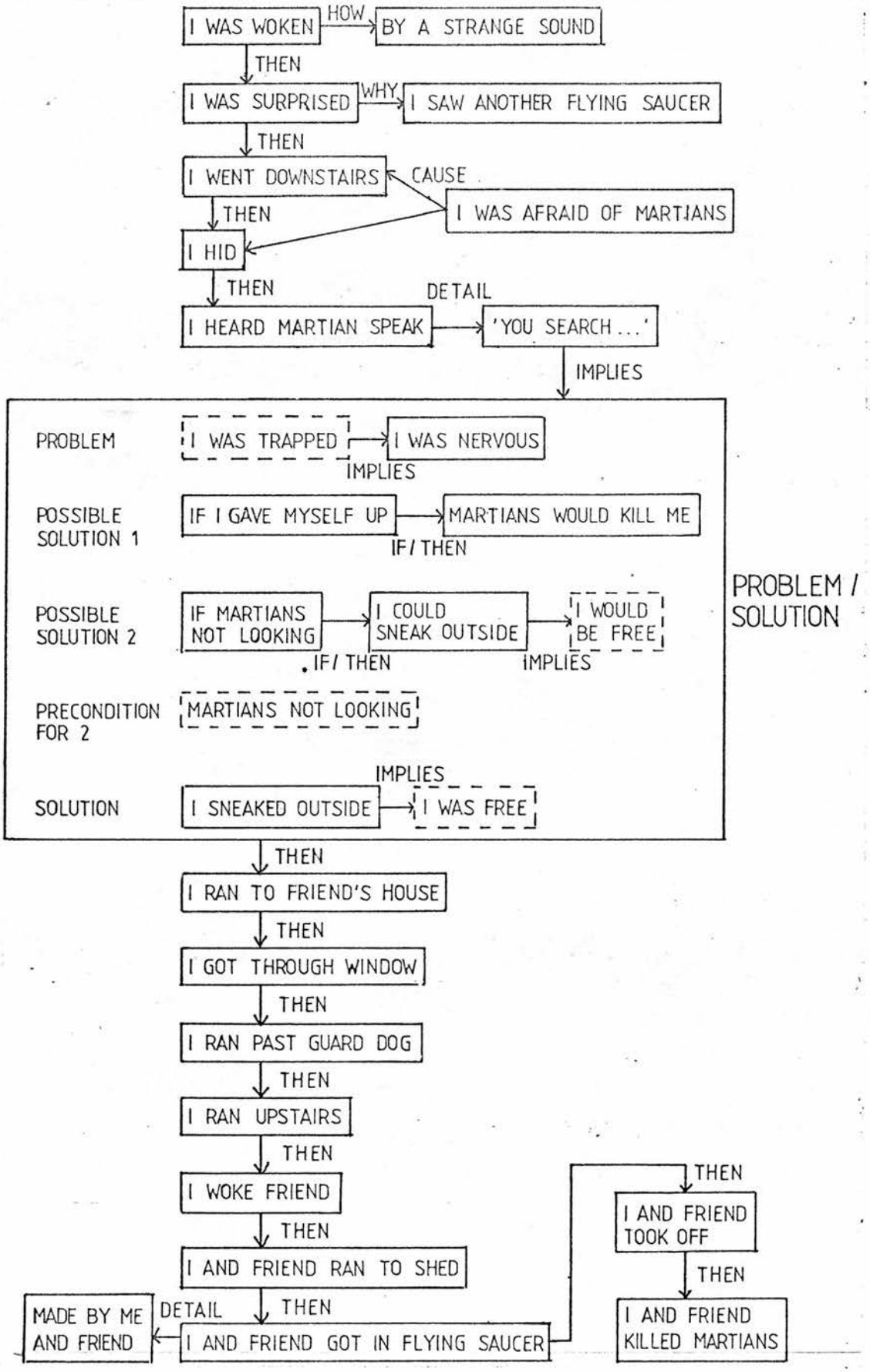


Figure 2. Network of James' 'Adventure While Travelling', second section.

groupings: 'big proud'; 'crowded and over-flowing'; 'big, clumsy, dirty'.

A considerably more coherent overall structure is found in the 'Island' story, written at the end of the project, than the 'Adventure While Travelling' story. The text is bound together by a single theme, cannibals, which is revealed to the reader through a sequence of scenarios - discovery of carcass; boats coming ashore; killing of native man - which are linked by the subject's progression round the island. The narrative is linear, with little elaboration (Figure 3), but the gradual development of the theme and the relevance of action to plot (the climbing of the hill both fulfills the stated aim of looking for wreckage of the boat and it provides the author with a setting for the observation of the natives) suggests that the author is building the story to a global plan. The central description is well structured, beginning with a general view - 'I saw some vultures tearing up some kind of carcass' - and then focussing on the remains and the human skull. The inter-sentence links are varied: 3 out of 41 sentences begin with 'then', compared with 8 out of 32 in the 'Adventure while Travelling' story. He includes reflective commentary and, by comparison with the pre essays, the vocabulary is richer, with more groups of modifiers: 'slowly and calmly'; 'tiny black dots'; 'tiny hole of light'.

James' initial essays show an ability to write to a coherent plan, but with little variation at the sentence or word level. His later essays show greater evidence of planning and improvements in the choice of word and sentence, with a more varied and vocabulary, greater use of modifiers, and more reflective comments.

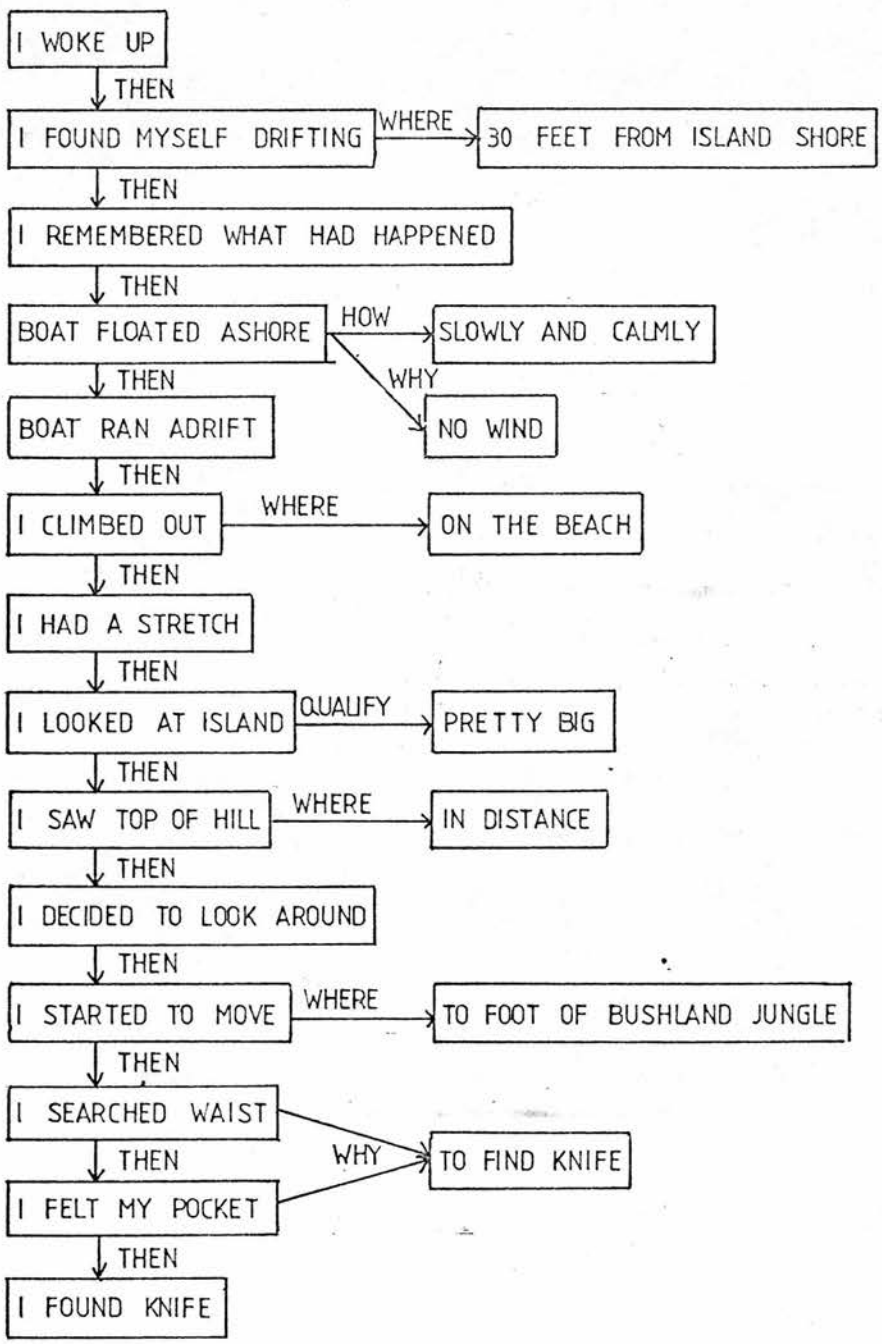


Figure 3. Network of part of James' 'Island Story'.

3.2. Louise

In Louise's 'Visit to the Department' essay, the scene is set by a well ordered, hierarchical description of the Department: name of the Department; contains computers; particular machine. This is followed by a meticulous description of Freddie, the robot: for example, 'it will first feel the long side and then the short side'. The structure is orderly; the vocabulary is apposite, but uninspired and repetitive. 'Adventure While Travelling' consists of a narrative constrained to fit a plot (Figure 4) of robbers changing identity.

The essay show signs of planning, but lacks coherency. It contains three references to the cases carried by the robbers and tramps. These appear to be the focus of the plot, but the references are garbled: 'big bags with thir on the side $'; 'they looked just like the men I had just seen first saw they had made the mistake of taking two cases'; 'instead of having a suitcase they had that suitcase the had'. Sentence boundaries are ignored and there is little characterisation or descriptive detail, apart from one section necessary to the plot: 'the men were dressed in pinstripped suit and black waiscoat golden watch bowler hat and had black umbrella'. This all suggests the Louise devoted attention to the plot, but neglected lower levels of text.

The 'Fairground' essay has a conversational style, heightened by being written in the second person: 'If you don't know what Bingo is it is a game...'. It is blemished with dull speech idioms - 'it tastes superb, it is really nice'; 'lots and lots of other things'; 'you put a black bit over it' - and degenerates into an explanation of the game of Bingo. Only one phrase - 'pink foaming' - suggests a

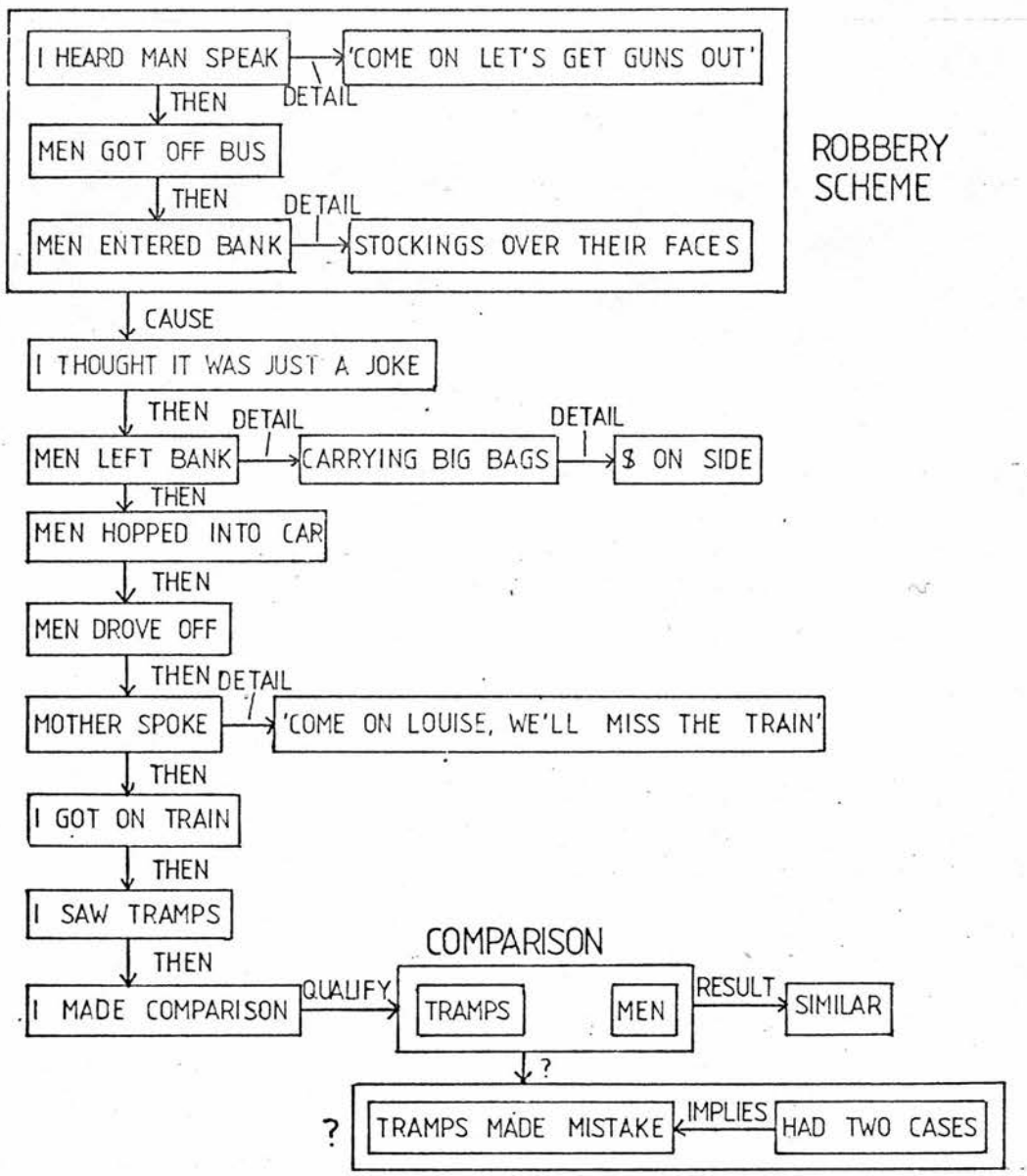


Figure 4. Network of part of Louise's 'Adventure While Travelling' essay.

considered choice of words.

The 'Island' story is greatly more interesting. It is not the simple exposition of a received plot, nor a chain of statements. The

story begins with a reflective sequence which establishes the setting and the subject's character. This is followed by an episode describing in detail the discover of the monkey, whose character holds the remainder of the essay together and provides a convenient finishing sentence:

> When I got home I told everyone of being on the Island nobody believed me but I will always remember monkey someday I'll get my own boat and sail back to the island.

The relationship between the subject and the monkey develops during the story and this is signalled by a change in phrasing. The first three references are to 'a monkey' or 'the monkey', but once the subject adopts it as a pet its title is change to 'monkey': 'I went to find monkey'; 'only me and monkey'; 'I will always remember monkey'. Otherwise, the vocabulary is dull, with no unusual words or phrases. At sentence level the language is somewhat richer than in the earlier essays, with reflective commentary 'to be honest I was glad to have his company', climax 'Oh could it be true would I be saved', and pathos 'he sat down beside me and he looked as though he understood how I felt'.

The text progresses chronologically, with a mixture of simple chain narrative and more complex schemas (Figure 5). Comparison with the 'Adventure while Travelling' story shows some qualitative changes in structure and language at the sentence level: variation in mood and style and descriptive passages inserted into the narrative. The 'Fairground' essay, however, shows disappointingly little improvement in style or vocabulary over the 'Visit to the Department'. It certainly does not reflect Louise's skill in the worksheet language activities.

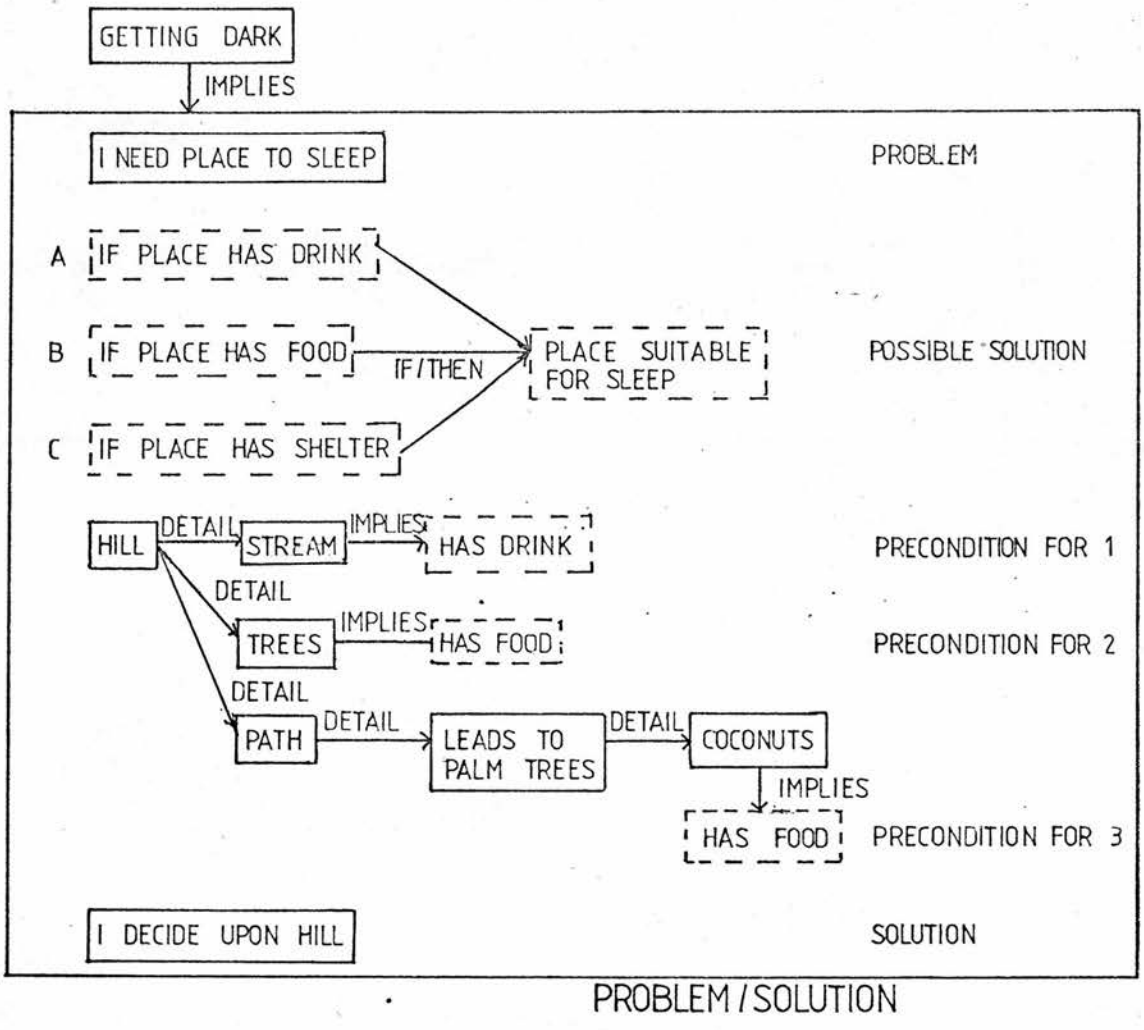


Figure 5. Network of part of Louise's 'Island Adventure' essay.

3.3. Dorothy

Dorothy's 'Visit to the Department' essay is patchy, with some careful description -

> It picked up a black flat block and put it on a big block with a hole in it and pegged it in with a wooden peg.

but also sections obscured by ambiguity and imprecision:

> Then it would pick it up and it could be controlled with a

control box which we used to make it pick up things.

Although the text has a roughly chronological ordering, an overview description - 'It can be controlled by a computer with a program which tells it what to do and the two cameras would show on a screen what it was looking at' - is embedded in the sequence. Dorothy mixes tenses at random - 'It can pick up'; 'It picked up'; 'It would pick up';'It enables Freddy to pick up' - and overworks words, with seven instances of 'pick up' and eight instances of 'block'.

The 'Adventure While Travelling' essay starts well enough, with two sentences which establish the scene and characters, followed by a successful account of a fairly complex incident, written without adornment save for the, well chosen, phrase 'dark creepy and silent'. The narrative then becomes erratic, with an increasingly compressed time scale (the subject crosses the Atlantic twice in successive sentences), and then shudders to a halt in an unsatisfactory sentence which resolves none of the plot: 'He died instantly the little girl heard of what had happened and had to stay in America with her aunt.' The essay has none of the hallmarks of mature composition, being a disjointed retelling of events, possibly from a received plot.

The 'Fairground' essay starts with signs of maturity: a focussing of attention from the entire field to the waltzers, apposition - 'bells ringing, buzzers buzzing' - and a medley of distinctive phrases: 'A field brightly coloured'; 'screaming is heard'; 'masses of spectators'. This panorama of the fairground is followed by a formless catalogue of fairground attractions, every sentence but one beginning 'There is' or 'There are'. Subordinate clauses offer some variety - 'Checking to see if there is any

trouble'; 'where you can always hear someone calling 'house'' - and the essay is concluded with a more lively, through rather incongruous, pair of sentences:

> There has been an accident in the big field a girl has fallen out of the "twist" which goes round and round and in and out she musn't have been fastened in right. It has been a wonderful day but it has to end.

Dorothy appears to have deliberately avoided the use of the word 'things' at one point, using instead 'mechanical objects', but only in the first paragraph is there any evidence of the care and originality found in the FANTASY descriptions.

After a paragraph of short sentences describing the landing, Dorothy's 'Island' story records the subjects languourous progress round the island, faithfully following the map drawn on the blackboard. The narrative is punctuated by some imaginative descriptions. One in particular evokes tranquillity:

> That night I was very restless in my small shabby hut so I got up and went to sit beside the blue rippling water. The air was cool and the moon shone brightly and reflected on the water. It was then I could sleep.

There are experiments with word and sentence: verbs of movement - 'walked'; 'hurried'; 'wandered'; adjective pairs - 'lovely hot'; 'small shabby'; 'blue rippling'; 'cool refreshing'; prepositional relative clauses - 'lovely hot sun in which a fell asleep'; (less successfully) 'a fresh stream in which I jumped it to and drank a lot of'; endophora - 'it was then'; adverbial clauses - 'when I came out of the water'; 'as I began to walk'; subject/complement inversion - 'I noticed that north of the island was the mouth of a stream'.

The overall structure is coherent but not monotonous. The episodes and settings follow naturally. Avoiding 'then' and 'but', she links sentences by adverbial phrases of place - 'on top of the hill' - time - 'in the morning'; 'later that afternoon' - and event - 'when I woke'; 'on the journey back'. The story is rounded off with a neat piece of reportage:

> On the journey back they told me of how they had be given the SOS signal before the ship had sunk and that they had already found seventeen of us that had been on the ship they had been in groups on other islands.
>
> The name of the island I was on was called Papeete which is one of the small islands in the Tuamotu Archipeligo.

The essay is flawed by grammatical errors and repetition (for example, three successive sentences begin with 'I') but Dorothy imposed form on the text by following a route round the island. She divided the story into distinct segments of activity and rest, marked by paragraph boundaries, and, at sentence level, ventured unusual constructions. She appears to have made considerable advances in control of language, at all levels, over the pre test essays.

3.4. Sharon

Sharon's 'Visit to the Department' essay begins with an overview sentence and continues with a chronological chain of incidents. The chain structure is broken by a description of 'freddy', but this is the only sign of a control of style.

'Adventure While Travelling' is well structured and follows a coherent plot, based on problem/solution schemas (Figure 6), with some sequential narrative.

It contains some speech idioms - 'gonners'; 'it was great'; 'I can

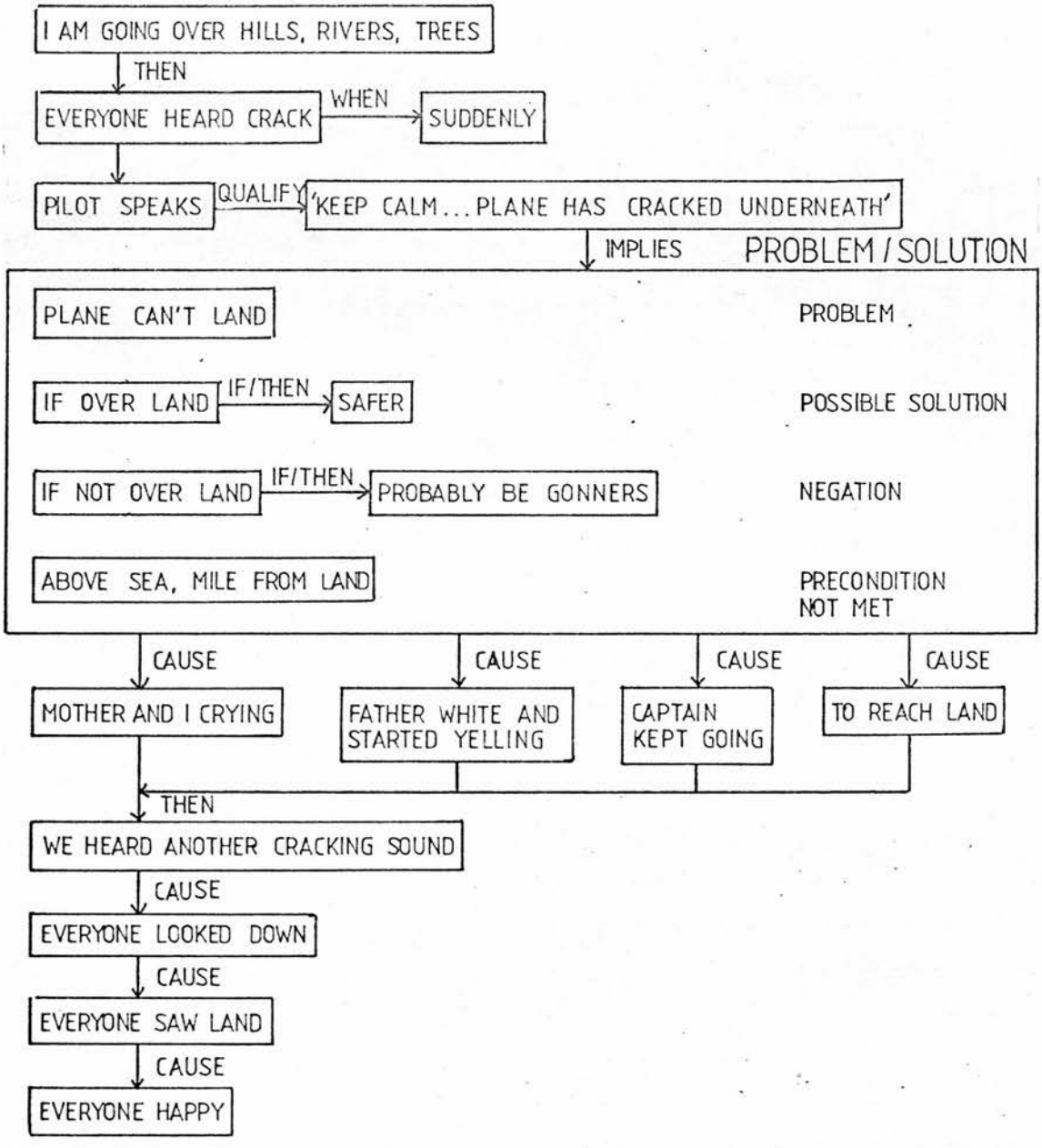


Figure 6. Network of part of Sharon's 'Adventure while travelling' essay.

tell you one thing' - but the sentence structure is cohesive, with a variety of conjunctions and adverbs linking sentences: 'so'; 'when'; 'all of a sudden'; 'just by chance'. Of the four 'Adventure' stories,

this comes nearest to having a mature style.

In the 'Fairground' essay Sharon retains the prose-poem style of her 'Haunted House' story, but imposes greater order on the text structure. She shifts focus from a distant view of the fairground, to a single stall and its owner. As the pace and involvement heighten, so the sentence constructions alter, from complete sentences, through a sequence of relative clauses, to a whelter of words ending in 'make you scream'. The activity then subsides and the syntax becomes more complex and complete. The final distancing sentence - 'you've left it all behind but you'll always remember the night at the fair' - completes the cycle.

The language is vibrant and evocative - 'wild children'; 'listening to the rapidness of the lady'; 'you try to touch the sky but never succeed' - and word repetition is used deliberately, to signify progression, profusion, or continuity: 'nearer and nearer'; 'lights flashing all around blue, red, yellow, green all flashing at the same time'; 'screaming, shouting wild children everywhere'; 'quieter and quieter'. Although the voice changes from first to second person and the grammar is ragged, it is not clear whether this is the result of inability, haste, or deliberate choice - certainly the two complex final sentences are well formed:

> But then the men start taking everything down and the park gets quieter and quieter untill theres nobody left but the papers blowing about in the wind and the rubbish left by the people who enjoyed there self so much. yove left it all behind but youll always remember the night at the fair.

The 'Island' story is a curious concoction of reflective commentary and stage directions, with a trite 'it was all a dream' sentence

appended. The episodes that comprise the story do not integrate well, but endophora - 'I'll go back to bed now'; 'get back to my fire' - provides some coherence. The story has no words or phrases to compare with those in the 'Fairground' essay. Nevertheless, the style is appropriate to its theme, a dream about exploring an island alone.

The essay can be seen as another stage in Sharon's experiment with style. The transactional style of the 'Adventure While Travelling' story is replaced by an expressive/poetic style in the 'Haunted House'. Both styles appear in the 'Fairground' essay, though in separate sections, and the merger is taken a step further in the 'Island' story, with transactional statements inserted amongst the expressive/poetic text.

3.5. Derek

Both of Derek's initial essays are chain structures, without detail or originality. The 'Adventure While Travelling' essay is written as one long sentence, composed of simple clauses coordinated by 'and' or 'but'. Each clause relates only to the one before, with no reference to a binding plot or to earlier events.

The post essays are, likewise, composed of unadorned chains of events. Only two phrases show any sign of deliberation: 'All noisy pushing music', in the 'Fairground' essay, and 'The palm trees are blowing the stream is flowing', in the 'Island' essay.

3.6. Kevin

Kevin only wrote 56 words, of simple description, for the 'Visit to the Department' essay. An extract from his 'Adventure While

Travelling' was used in chapter two to illustrate the 'incomplete schema-directed' structure. The plot is complex, but there is no sign of mature features at any text level.

After the introductory sentence, his 'Fairground' essay consists entirely of direct speech, which indicates a good memory for conversation, but not a mature writing style. The 'Island' essay shows some mature features. He breaks the narrative for a description of the islands and occasionally avoids the most obvious choice of word: 'determoned', 'inhabited', 'rushed', 'dence'.

3.7. Anne

Anne's 'Visit to the Department' essay contains no mature features. It consists of an account of the visit, in a single 97 word sentence of simple clauses linked by 'and' or 'so', followed by a series of facts about the robot. The 'Adventure While Travelling' story is more accomplished, with a coherent plot, successfully resolved, a varied sentence structure and a particularly thoughtful simile: 'When I looked down it looked like one big patchwork quilt surrounding the whole world.'

Her two post essays have a mixture of mature and immature features. Part of the 'Fairground' essay was used as the example of immature style in chapter two. It contains one well constructed sentence in an otherwise repetitive and unimaginative description. The 'Island' essay is similar to 'Adventure While Travelling'; it has a clear, coherent plot, but lacks mature features at senteuce and word level.

3.8. Saras

Saras' essays are not particularly helpful to the evaluation. She is the only member of the group from a bilingual immigrant family; she misinterpreted the instructions for the 'Adventure While Travelling' essay, and wrote a catalogue of possible adventures, rather than a single incident; she was absent from the session in which the 'Fairground' essays were written. Her 'Visit to the Department' essay comprises a disjointed set of descriptions. The 'Island' story is more coherent, but shows no obvious sign of word or sentence control.

3.9. Nigel

Nigel missed two sessions, when the 'Adventure While Travelling' and 'Fair' essays were written. His two remaining essays differ in style. Both contain disjointed lists of incidents, but whereas the 'Visit to the Department' is composed of simple statements - 'He can pick up blocks and make towers'; 'The fire bell went off' - the 'Fairground' essay is one long reel of descriptive words and phrases: 'Back to the shows on the ghost train whooo on the big dipper up, down, up, down, under, over, try the fun house ha, ha, ha'. Its 'stream of consciousness' style is similar to that of Sharon's 'Fairgound' essay. Nigel appears to have developed some control of language during the period of the project, but its extent cannot be judged from just these two samples.

3.10. Richard

Richard's essays show no change in style or structure over the period of investigation. Both the descriptive and the narrative

essays contain unadorned lists of events, with an immature vocabulary and little variation in syntax.

3.11. Robert

Robert comes from a very different background to the rest of the group. His family are keen readers and theatre-goers, he writes poetry for pleasure and, at the time of the project, he had just won a scholarship to a dance college. Given these artistic influences, his 'Adventure While Travelling' essay is surprisingly immature. An extract from the essay was used as the illustration of 'exponential increase in pace' in chapter two. His 'Visit to the Department' essay is better constructed, deliberately allowing the reader to guess the object from its description, before revealing it to be a robot and describing its operation. The sentence syntax, though, is unvaried and the vocabulary is undistinguished, save for the word 'predecessor'. The later essays show mature features at every level: coherent structures; varied syntax - 'a well used path made not by humans but by animals'; 'in the excitement of hearing' - and imaginative vocabulary: 'like timid mouses opening their eyes'; 'plunged into darkness'.

4. CONCLUSION

The general impression of the experimental group essays is one of diversity and idiosyncrasy. There is no consistent pattern of development across the group and the children appear to have assimilated different aspect of the course.

Dorothy showed the most significant advance in writing skills. Her two narrative essays indicate a major improvement in planning and

sentence construction during the project. In the 'Island' essay, she displays creativity and a command of language at all text levels. Nothing similar is evident in the 'Fairground' essay, however, which suggests that her skills are applied sporadically, or that they depend heavily on the type and subject matter of the writing task.

Unlike the other children, Sharon had more success with the 'Fairgound' essay than the 'Island' one. This suggests that, at this stage in writing development, a mature style cannot be predicted for a child or topic, but is the result of an interaction between the two. Sharon's experiment in style is partly successful. It would appear that she directed attention towards varying the sentence structure, to the detriment of higher level text cohesion, which supports the assertion in chapter two that children make major qualitative changes in style by concentrating attention for a period on a single technique, and letting other skills lapse.

The 'Island' essays of both James and Louise show some improvements in text organisation (particularly James' essay) and vocabulary over their earlier descriptive essays, but the major developments are at sentence level, particularly in the variety of sentence types and the use of description within narrative writing. This reflects the emphasis of the teaching scheme.

The essays by the control group children were as diverse as those from the experimental group, so no simple comparison can be made between the two groups. Of the seven control group children, only Robert appears to have made major developments in writing abilities, comparable to those of Sharon and Dorothy. Derek, Richard and Anne made no substantial progress. Both the pre and the post

essays from Anne are mixed in quality, containing some mature features, but there in no evidence that she acquired important new techniques of writing during the period of investigation. Saras, Kevin and Nigel seem to have developed some little control of language, but its extent cannot be judged from the sample essays.

CHAPTER 9

CONCLUSIONS AND PROPOSALS FOR FUTURE RESEARCH

Until recently, the ability to write clearly and creatively has been regarded as a mysterious gift. Even 'Elements of Style' (Strunk & White, 1979), the influential guide to writing style, states:

> Who can confidently say what ignites a certain combination of words, causing them to explode in the mind?...These are high mysteries...There is no satisfactory explanation of style, no infallible guide to good writing, no assurance that a person who thinks clearly will be able to write clearly, no key that will unlock the door.

Creative writing no longer remains a 'high mystery'. Research in cognition and linguistics promises to provide a comprehensive and applicable theory of writing, one that can help a child to develop the skills of creative writing in a systematic manner.

1. CONTRIBUTIONS TO KNOWLEDGE

This thesis has extended our understanding of creative writing as a cognitive process, by proposing two basic mechanisms for writing - generate and select, and transform and select - which operate at different textual levels as a writer plans, composes and revises. A child must learn to control these mechanisms, in order to expand her range of writing styles, to produce more mature language, and to suit style to function and audience. We suggest that control depends upon a 'rule knowledge' of language - an awareness of language as an object - and that this rule knowledge is related to the Piagetian stage of formal operations. Once a child has reached this stage of cognitive development, she can begin to understand and control her

writing process and to acquire new mature techniques for creative writing.

We have produced a teaching scheme for creative writing that incorporates these notions. In addition to taking part in language activities and creative writing projects, a child uses computer programs to generate and transform text. The scheme was tested with six children, aged eleven, during 29 sessions, each lasting 60-70 minutes, over a period of nine months. A control group of children of a similar age provided a reference for comparison. The changes in writing process of the experimental group children were assessed, as were their attitudes to the scheme and their interactions with the computer.

A feature analysis was used as the main method of assessing the written productions of the individual children. The presence of certain linguistic features in a child's writing indicates a cognitive maturity; the greater the variety of features, the greater the range of writing skills. Pre and post test essays from both the experimental and control group children were subjected to the feature analysis and were also rated for overall quality.

2. SUMMARY OF RESULTS

During the first part of the scheme, concerned with the understanding and control of written language, the experimental group children formed two distinct groupings. Two children seemed unable to view language as an object and showed little interest in the language activities. By contrast, the other four children were all willing and able to experiment with language. This dichotomy accords with the

hypothesis that a rule knowledge of language represents a discrete stage in a child's language development, and one that is attained around the age of eleven.

The four children who progressed to the second part of the teaching scheme were all able to plan and revise their written productions and made substantial improvements to them during redrafting. The assessment essays of the four children indicate developments in the style, structure, and variation of their writing, but of a different quality for each child. One explanation for the irregular pattern of progress across the group is that the scheme introduced too many new techniques and concepts in too short a time, so that each child grasped only a small subset, directing attention towards one aspect of style, while allowing others to lapse.

There is good evidence that the children enjoyed the scheme, from their favourable comments, their reluctance to leave some of the computer-based activities, and the fact that two of the children voluntarily took on considerable extra homework. Two children, Sharon and Dorothy, appear to have carried this enthusiasm over to their personal reading. Their class teacher reported on the children's reading habits at the end of the project:

James: Shows no interest [in reading] except when forced.

Dorothy: Interest increased this year. Reading good teenage girls books.

Sharon: Has become dramatically addicted during the year. Progressed through Enid Blyton to good teenage books.

Louise: Still rather immature. Enid Blyton and books aimed at younger children.

3. COMPUTER PROGRAMS

All the computer programs can be simulated by writing words on slips of paper and then arranging and rearranging the slips. This is a useful practice for demonstrating the algorithms, but it is no substitute for running programs. First, the algorithms are executed automatically by the program, so a child does not have to follow an exhaustive list of instructions to manipulate the words; second, the computer is fast, allowing the child to explore many more permutations of text with the computer than with slips of paper; third, the computer can issue a neat typewritten copy of any chosen piece of text. The four children who completed the project enjoyed the computer-based activities and were taken with the idea that a machine can create sentences and 'poems'.

4. LIMITATIONS OF THE INVESTIGATION

The investigation was an exploratory one: the aim was not to assess the teaching scheme by a psychometric evaluation of a carefully controlled experiment, but to elucidate the process of written language development and to gather information that could lead to improvements in the teaching scheme. Nevertheless, we would have preferred a more impartial assessment of the children's performance. In particular, external assessors should have carried out the feature analysis of the essays, but that would have meant training assessors in the method of feature analysis and would have gone beyond the constraints of a thesis project.

Another limitation has already been mentioned: in retrospect, it seems likely that the children were presented with too many new techniques and concepts over a short period of time. A slower pace of learning, with greater emphasis on applying the techniques to guided writing projects, might have given the children more opportunity of integrate them into existing writing strategies.

The investigation was confounded by the influence of the children's class teacher. We would expect this to reduce the differences between the control and experimental group. The school's headmistress described the teacher as 'taking a keen interest in creative writing' and her approach to the teaching of creative writing was very similar to that of the project scheme, a combination of language activities and imaginative writing projects. She had previously prepared her own worksheets on a variety of language topics, including cloze tests and rewriting prose passages to alter their style. She set these for the entire class during the period of the investigation. Her interest and support was more than welcome; at times it was all that kept the project running, but the teaching of the control group was not typical of primary school English lessons.

As for the management of the project, too much attention was paid to the more assertive children - Kevin, Derek and, to a lesser extent, Sharon and James - satisfying their immediate demands rather than allowing them to solve problems alone or cooperatively. Derek and Kevin should have been separated earlier from the rest of the group, as soon as their difficulties became apparent.

5. FUTURE RESEARCH

A priority for future research is to develop a robust method of assessing short term changes in children's writing abilities. The method of feature analysis appears promising, but requires further investigation, particularly at the section level of text. Can we construct an associate network from finished text that is consistent with the writer's own perception of its structure? Is there a canonical set of connective arcs which characterise all, or most, of creative writing? Should a novice writer be advised to construct an explicit network before starting to compose text? Can complex or subtle figurative and rhetorical structures - irony, analogy, and pathos, for example - be represented in a network form?

Given a robust method of feature analysis, we need to assess the ease of teaching the method to people who have little or no training in linguistics, such that they could apply it to children's text with a high degree of concordance.

A more extensive investigation of a child's meta-linguistic development is also needed. The first stage could be to produce a test a meta-linguistic abilities (for example the ability to copy syntactic patterns, to group sentences by errors in grammar, and to reproduce syntactic transformations). We would expect the test, administered to a large group of eleven year old children, to produce a bi-modal distribution of scores, with the two clusters corresponding to those children with and without rule knowledge of language.

The teaching of creative writing should take account of children's developing awareness of thought and language, and the more mature children should be provided with linguistics-based activities. The teaching material described in this thesis could be extended to cover other writing functions - for example, persuasion, exposition, instruction, poetry - and other uses of language: speech, drama, literature. The computer programs could be improved. Storymaker and FANTASY are the seeds of a program that would allow a child to create and explore story plans. WALTER could be developed into an 'intelligent word processor' that would recognise the word, sentence, and section as the basic structural units, rather than the character, line and screen, and would provide linguistic operators for creating and transforming text. The thesaurus could be one of a set of language aids, which might include a spelling checker or corrector, a dictionary, and a relational database. These could all be incorporated in a single integrated system, like the Writer's Workbench, but designed specifically for children. A child could then use the programs, in conjunction with teaching material, as a personal 'language workshop'. The computer would not replace or relieve the teacher, nor would it fit neatly into a school curriculum. It would not provide a structured lesson, nor a well defined and examinable set of facts. It would allow a child to become a research worker, with control over the content and structure of her learning and equipment to carry out worthwhile experiments.

The location for such a language workshop may be a room in a school, or part of a library, a museum or a community centre, or it may be in the child's home. It would be stocked with books and audio-visual material as well as computers, children could plan their

own study and adults would be available as advisors. This thesis has provided evidence that children can learn to control and extend their written language in such an environment, and enjoy the experience.

APPENDIX 1

DIAGNOSTIC LANGUAGE TEST

1. What is wrong with these sentences:

   a) CAT SAT THE ON MAT THE.

   b) COLOURLESS GREEN IDEAS SLEEP FURIOUSLY.

   c) THE SITS ON THE CHAIR.

2. Make similar sentences to the ones below by changing each word into a similar part of speech, for example:

THE	CAT	SAT	ON	THE	MAT
THE	DOG	RAN	UNDER	A	TABLE

   a) MARY EATS THE DELICIOUS CAKES ON THE PLATE.

   b) ON THE SWING IN THE GARDEN THE ROBIN SITS.

3. Replace each part of speech with a word, so that the words form a sentence:

   ARTICLE ADJECTIVE NOUN VERB ADVERB PREPOSITION ARTICLE NOUN.

APPENDIX 2

EXAMPLE RUNS OF THE FANTASY GAMES

FANTASY GAME CREATED BY DOROTHY AND LOUISE

Welcome to FANTASY

You are in a long straight hallway with brown oak walls,
hanging on the walls are old victorian pictures. On
the ground is a telephone table and chair.
a front door leads west
a wooden door leads southeast
a wooden door leads south
a wooden door leads east
The following are also here:
1 - a sleepy butler

south

You are in a study . There is a cold draught coming
from a wall . There are bookshelves on all four walls,
on one wall all the books are about "Wine". There
is a big desk with an executive chair behind it . On
the desk there is a cup of coffee which is still hot .
a wooden door leads south
a wooden door leads north
a secret passage behind the bookshelf leads southwest
There is nobody else here

objects

you can see
1 - a broken bottle.
2 - a full bottle of wine.
3 - a glass which has been used.
4 - a bell.

take 4

ok

southwest

try again

southwest

You are in a dull , clammy kitchen with a big black stove on a wall . There is a flaming fire on another wall . There is a pane of glass smashed which was in a big window which is all steamed up . There is a sink which is full of dirty dishes .
a secret passage leads west
a wooden door leads northwest
a wooden door leads north
a wooden door leads northeast
The following are also here:
1 - a dazed kitchen maid

a dazed kitchen maid has just left through a wooden door (northeast)

objects

you can see
1 - a dirty dish.

north

You are in a bright coloured happy atmospheric room, in it there is, two big lounging chairs bright fabric but damaged, a sofa to match chairs, a coal fire still burning, a glass coffee table smashed to pieces. keys to the cellar lie beside it. Ripped victorian pictures are hanging on the walls.
a wooden door leads west
a wooden door leads northeast
a wooden door leads south
a wooden door leads east
The following are also here:
1 - a chef

objects

you can see
1 - a page of diary dated April 10th.
2 - a note saying "Have a glass of wine".

west

You are in a hallway
a wooden door leads west
a wooden door leads east
a wooden door leads south
There is nobody else here

west

You are in a blue coloured bedroom, with a mysterious atmosphere there is a strange rattling noise coming from the window. In the bedroom there is a toilet which is at the left hand corner. There is a chest of drawers and a wardrobe to match. In front of the bed there is a grey, wet mist.
a wooden door leads north
a wooden door leads west
a wooden door leads south
a wooden door leads east
There is nobody else here

objects

you can see
1 - a gold bracelet and earrings to match.

take 1

ok

south

You are in a dark, dull bedroom, with dark beech wardrobes and dressing table the curtains are torn and ragged. The bed is unmade. The atmosphere in this room is horrifying...
a wooden door leads north
a wooden door leads west
There is nobody else here

west

You are in a hallway
a wooden door leads north
a wooden door leads southwest
a wooden door leads northeast
a wooden door leads east
a wooden door leads southeast
There is nobody else here

southwest

You are in an emporium, filled with a cold, misty fog. In here there is a billiard table, there is a dark mist over the billiard table. There is a desk with keys to open the desk lying on top. Inside the desk there a hand it is holding a bottle of "Wine". There is a cupboard, inside there is a caddy full of golf clubs .
a wooden door leads east
a wooden door leads north
The following are also here:

1 - a sleepy butler

objects

you can see
1 - a golf club engraved with the words "Les Soirs 1884".

take 1

ok

value

your possessions are worth 320 gold pieces

quit

I hope you have enjoyed the game

FANTASY GAME CREATED BY JAMES AND SHARON

Welcome to FANTASY

You are in a porch. It is a dark and cold night.
a door with a sign on it saying "Rooms Available"
leads east
There is nobody else here

east

You are in a hallway with a waiting room.
a wooden door leads west
a door with a sign "Dining Room" on it leads north
a wooden door leads east
a secret passage leads southwest
a wooden door leads south
a door to the waiting room with a sign on it reading
"Go straight to the dining room. Dinner being served."
leads northwest
There is nobody else here

southwest

try again

southwest

You are in a library.
a secret passage leads north
a wooden door leads west
a secret passage leads east
There is nobody else here

west

You are in a guest room. There is a big oak brown 4
poster bed. You try to get to sleep you hear rats
scratching and wolves howling.
a wooden door leads east
a wooden door leads west
There is nobody else here

objects

you can see
1 - a statue of a werewolf.

take 1

ok

west

You are in a hallway with a waiting room.
a wooden door leads west
a door with a sign "Dining Room" on it leads north
a wooden door leads east
a secret passage leads southwest
a wooden door leads south
a door to the waiting room with a sign on it reading
"Go straight to the dining room. Dinner being served."
leads northwest
There is nobody else here

north

You are in a dining room. There is people eating food
they tell you to sit down.
a wooden door leads east
a wooden door leads south
a secret passage leads southeast
There is nobody else here

east

You are in a kitchen. There are cabinets and a sink.
There is a door with a key in it beside the stove.
a wooden door leads west
a door with a key in it leads down
There is nobody else here

down

You are in a cellar. On the wall there is a note saying
"HA HA I FOOLED YOU TRY AGAIN".
a wooden door leads up
There is nobody else here

objects

you can see
1 - a dead rat.
2 - a crow bar.

quit

value

your possessions are worth 80 gold pieces

quit

I hope you have enjoyed the game

APPENDIX 3

METHOD OF MARKING THE ESSAYS

Each pre and post essay was typed by the author, retaining the syntax, punctuation and spelling as written (see Appendix 4). The name of the writer was omitted. The essays were grouped according to subject and separate copies were handed to two assessors, along with the marking instructions reproduced below. The instructions are similar to those provided for markers of O-Level English papers. Both assessors were teachers of English who regularly marked essays of 10-12 year old children. The teachers were not explicitly told the design of the investigation, but they may have gathered from informal conversation that these were pre and post essays from two groups of children. If so, this would constitute a flaw in experiment design.

MARKING INSTRUCTIONS

GENERAL IMPRESSION

Read over each essay and, at the end of each one, assign it a mark from 1-7 based on a general impression of the pupil's writing ability. A score of 1 should indicate that the pupil is an extremely poor writer for an 11 year old, and a mark of 7 should indicate that the writer is extremely good for the age. Mark all the papers with a general impression mark before giving analytic marks.

ANALYTIC

Assign four marks to each essay, on a scale of 1-5, with reference to:

1. Content
2. Organisation
3. Appropriateness and style
4. Grammatical conventions

For categories 3 (Appropriateness and Style) and 4 (Grammatical conventions) refer only to the first 20 lines

Content

Judgements in this category should relate to the subject matter of the essay. Assign a rating of 5 to writing in which the content is apt and original. Writing which is wholly inadequate in content (in terms of the task given) should be given a mark of 1.

Organisation

This category relates to the manner in which the content is ordered or sequenced. Give 5 to writing which is organised exceptionally

coherently and 1 to an extremely incoherent structure.

Appropriateness and Style

'Style' refers to the writer's choice and purposeful use of vocabulary and sentence structure and the general appropriateness of such expression with regard to the writer's subject matter, audience and purpose, insofar as these can be determined. Judgements relating to style should thus be topic related. In writing a story, for instance, pupils may be required to relate sequences of clauses without obvious repetition of the same connectors between clauses and sentences. The presence of words, phrases or sentences (such as cliches or expressions from colloquial speech) which are inappropriate to the style and task should also be considered.

Give a rating of 5 to writing in which the choice and ordering of the wording is appropriate to the subject matter and audience, and which give evidence of the fact that the child is able to write in such a way as to achieve conscious stylistic effects. An essay which contains poor style and which fails to adapt to the subject-matter and audience should be given a mark of 1.

Grammatical Conventions

In written English a number of conventions are observed by proficient writers which reflect, in particular, the need to represent unambiguously the relations between components of sentences, clause relations and boundaries. Check for omissions of punctuation marks where such omission results in the fact that the grammatical relationship between two or more clauses or sentences are unclear or open to more than one interpretation, eg: "It was a rainy day and we were bored as usual we could not go out and play.....". Note also lack of cohesion or relatedness between different parts of a sentence or between successive clauses and also problems that a child may have in maintaining tense agreement between components of a sentence. The grammatical relationship between parts of a sentence may be misunderstood if, for example, commas are omitted or wrongly placed around phrases in apposition, in a succession of nouns or adjectives, or between clauses and phrases. Children sometimes introduce a comma between sentences which are linked in meaning, or they miss out punctuation altogether. While this does not necessarily lead to misunderstanding, you are asked to take note of it as evidence that a grammatical boundary is insufficiently defined.

Do not record as grammatical errors the use of regional grammatical features, colloquial expressions or slang. If such usage is not appropriate it should be judged under the 'Style' category. Do not record spelling mistakes or confusion between upper and lower case letters as grammatical errors.

Essays that contain no grammatical errors should be given a grade of 5. Writing in which none of the sentences in the first 20 lines is grammatical in the above sense defined above should be given a grade of 1.

APPENDIX 4

PRE AND POST ESSAYS

Visit to the Department - James

First we went to see the computors then we went to see Freddie the robot. He had to tv cameras as his eye`s. There was a board which had bricks on it and there was two arms that moved the wooden bricks about. There was two computors that told Freddie if there was a brick there or not. The tv cameras scanned the board which everything was on. There was a wee box that had button`s to control the arms. The board that had the bricks on could move about. He built a tower with 5 bricks. When he picked up the sixth brick he knocked it down. There was a fire alarm that went of and every rushed out side but it was a false alarm.

Adventure While Travelling - James

Flying Saucer

I was in bed when I got sucked up by a flying saucer. It was big with glowing lights. The little martians were green, with big heads. They were very mean to me. "This is your head martian speaking, We will execute the earthling at precicely now". They were going to make me eat a red hot pepper. I took my first bite, "m`m why dont you have some", "no it is very hot ater the first bite ", me, "Arrrggggrrrghhh"!"Water! Water! Water! give me water." Sorry wev`e none left." My mouth was fire when I blew out every thing went on fire. I blew it at the martians and killed them. Then I got back to earth. The next night I was woken up by a strange hurling sound, and to my suprise it was another flying saucer. I went down stairs and hid. I heard the martians speaking, they said "You search there and then go upstairs to the rooms and the atic , When you finish that search the basement, I`ll go back to the spaceship". I was feeling very nerveaos , If I gave my self up they`d kill me. I thought to my self , mabye when they wern`t looking I could sneak out side , I did just that thing. I ran out the door and over to my friend`s house. I got through the window and past there gaurd dog. Then I ran up stairs to wake my friend, then I woke him up. Then we ran to his shed and got our flying saucer that we made, then me and him, took of . Then we destroyed the martians space ship and the in the end we killed the martians. That was the end of my close encounter. Then the day after the martian`s invaded earth. They killed humans and destroyed houses and buildings. Me and my friend thought and thought day after night how to kill them. Then we got a chemistry set and made a bacteria. Then they came to Britian and destoyed London and all the big citie`s , Then the came to Edinburgh. We let the the bacteria out of the tube. It killed all the martians and we never heard of them again. The end.

Fairground - James

A day at the fair.

It was in the evening when there was screaming, and shouting as the roller-coaster went upside down and did the loop-the-loop. There was quite a few posh people riding on the glamarous shining roundabout horses, and they were humming the roundabout tune to them selves. Over beside the animals in thier cages was an old lady making little suits for her monkey`s. There was four of them and they were wearing different coloured ties. After watching the monkey a ran quickly over to the big proud lions and watched it eating its big chunks of red meat. The lady with the monkey`s were doing some juggling tricks. There was some ginormous steam engines with there shiny whistles whistling. There was small stalls, some with food and some with soveniers and they were all making a good lot of money. The amusements were all crowded and over-flowing with people.There were round-a-bouts, big dippers, tunnels of love, and ghost trains. After the fair was over all the workers packed up everything and went away to some other town in there big clumsly, dirty trucks and caravans.

Island - James

Suddenly I woke up, I found myself drifting about 30 feet away from an island shore. Then I started to remember what had happened. The boat floated slowly and calmly to the shore, because there was no wind. When my boat ran adrift on the beach, I climbed out and had a stretch. The Island to me looked pretty big. I could see the top of a hill in the distance. I thought to myself if I should go and have a look round a part of the Island,so I started to make my way to the foot of some kind of bushland-jungle. I felt round my waist to see if I still had my knife. I felt my pocket and I found it. I then started to make my way through the jungle. After, about two hours walking I came to the end of the jungle, and there I was at the foot of the hill. I said to myself " I have to climb that hill to see if theres any remains from the wereckage of my boat". I started my long journey up the hill at last. I climbed for about 1 hour and I had only got half way up. I looked straight up above me and there I saw some vultures tearing up some kind of carcass. I scrambled up to where the vultures were eating and frightened them away. The remains looked like the arms and legs of a man. I looked under the bushes and there I saw what looked to me like a human skull with some rotting flesh on it.I thought the Island might have been inhabited but the thought faded away quite quickly. After that I climbed to the top and took a look out to sea in the distance I saw tiny black dots come towards the shore. There was native looking people in them. After about half-an-hour, they landed on the shore. It looked like they were lighting a fire and chanting something. Then suddenly I saw them killing a native man with a club. After they had killed him a few of the native men started cutting him up. They must be cannibals I said to myself. I thought that I should walk down the hill and find some kind of hiding place so the natives wouldn`t find me. When I had got to the bottom I made my way in to the deepest part of the forest. Then in the corner of my eye I saw an opening in the rocks. I walked over to it then I slipped through and took a few steps forward, then suddenly I fell into a pool of water. It must be and underwater lagoon, I thought to myself. I started swimming towards a tiny hole of light in the distance. When I got there I saw that it was an opening. I climbed onto the ledge and climbed through the opening. I heard some gunshots in the distance and some shouting. I wondered what it could be. I scrambled through a small patch of bush and there on the beach were some naked native`s running from some men. I saw a moter boat at the far end of the lagoon, and it said coast-guards on it .Oh! would this be my chance to escape from this horrible life. I started to run to the boat then suddenly I was shot in the head.

Visit to the Department - Louise

Freddie the Robbot

We came today to a place called The Artificial Inteligence. Today we went down stairs we saw lots of computers they are good we are coming again (some of us). The thing most of us were looking forward to was seeing freddie. Freddie is a robbot he has two eyes but they are not like owers one is a television camera and it scans a cross a table and then when it finds a brick it will first feel the long side then the short side it picks it up moves the table and puts the brick down then again it scans for another brick then it picks it up and puts it on top. It is very accurate and it puts it on until it has five or six bricks it was just going to knock them down and the fire alarm went it was just a practice and they gave us some other exampiles and after that we asked questions and we saw a robot they are working on it is called Cecil.

Adventure While Travelling - Louise

Robber Adventure

My adventure started when I went on holiday to New York first I went bus to the train station where I saw two men,they seemed to be buisness men the were dressed in pinstripped suit and black waistcoat golden watch bowler hat and had black unmbrella and suit case you know the people I mean and there was me with my scruffy jeans and a polo kneck I dicide that when I got off the bus I would changer into my good skirt and nice blouse. I heard one man say "Come on Jimmy lets get the guns out" he got a off the bus and I saw them go into the bank with stocking over their face I thought it was just a joke then I saw them come out with big bags with thir on the side $. They hopped into a red car and off they went my mother said "Come on Louise or we will miss the train". On the train I saw 2 tramps but they looked just like the men I had seen first saw they had made a mistake of taking two cases we got the train and got of in London because we had 2 hours to wait for the plane. We had come in early and went for something to eat and then we went to look round the shops to look for some new clothes for me and my mum. my dad did not want to come but he waited for us at shoe shops and I got 2 new skirts and then we went to the Airport and got on the plane I could not wait to get into the States to see my younger cousin when I got on I saw the two men again but back in there pinstriped suit and the rest of the stuff but insted of having a suitcase they had that suit case the had they got off at the States the same as me I said to my mother I was going to the toilet in the airport but I did not I went up to one of the policemen and told them the whole story they said "What did the men look like?" and before I could answer he took me to the sergeant and he got me some photographs and the sergeant said "Thats fine little girl" and I said "but there were 2 men he let me listen to his radio I heard "This is 1,2,5 to sergeant and he said they have found the two men and they said "This is a little reward" now I have more spending money".

Fairground - Louise

The Fair

As you walk in you hear screaming,laughing and crying. You see an enormously big wheel with people on little seats you see a ghost train thats where lots of the crying and screaming is coming from they have a place like a little stall it is round you see people going up to it and buying little balls the throwing the balls at little fish bowls if you get it in you win a fish. You also see stalls with cakes and sweets and clothes and popcorn everything. If you want you can have a ride on the roundabout but it is really for small children, if you go further forward behind the roundabout you will see people buying pink foaming stuff called candy floss, it tastes superb it is really nice. In this fair there is lots of other things like target and a Mexican Hat and lots and lots of other things. For the older people there is a Bingo you could bring your mum along. If you don`t know what Bingo is it is a game where you put five or ten pence in a little slot and all your numbers on a little board thing lights up then a man calls out a number, he calls out numbers like Four AND Seven forty-seven and if you have this number you put a black bit over it. when all your numbers and covered with the black lid then you shout "HOUSE".So if your ever near why not just come in and see "THE FAIR".

Island - Louise

"I am lying on a lifeboat, I can only remember the ship sinking and someone putting me in this lifeboat". I'm nearing a bay which is in the Archipeligo I don't know what Island though because I must have fainted or fallen asleep". "Now I'm right on the Island I wonder if theres any inhabitants". "Well I better get out and see" I walked slowly and carefully around this Island I heard a noise I was about to turn and run when I thought "If I run I'll never find out what that noise is, I came on this trip to have an adventure and this might just be my chance", I walked towards the noise it sounded like people talking, I began to get excited then to my disappointment I saw what was making the noise "A monkey" It was a playful monkey and came down, it started throwing coconuts at me luckily for him he missed I picked up the coconuts and walked away. The monkey followed me, soon I got used to him so he started to walk beside me (to be honest I was glad to have the company).

As I walked round the Island I opened some of the coconuts, I shared them with the monkey. It was getting dark now and I had to find a place to sleep so I decided upon the hill because there was a stream which I could drink from, and at the bottom there was trees to sleep under and there was a foot path leading to the palm trees where I could get coconuts.

In the morning I got up just when the sun had came up it was a beautiful sight. I decided to wash in the stream and then go and find something to build a small house on the hill with. I went and found monkey. Then I went out to get the meterials I got palm leaves which were not bad and I got mud from the trees down at the bottom of the hill.

We started work on it at about 12.30pm. We finished it about 5.30pm we were both very tired. I went to the palm trees and got some coconuts to eat. We had them and then I went for a walk along the shore. When I got back it was 9.00pm when I got back up the hill I went straight to sleep. In the morning I got up at sunrise again and looked out on to the sea the night before had been stormy and my boat had been carried right out into the sea. I liked this place but there was only me and monkey and a few other animals. I could not go on living here I would die "oh!""I see it was to good to be true to get chosen for this trip now I'll die". I walked along the shore I sat down on the sand. Then monkey came he sat down beside me and he looked as though he understood how I felt. I looked out to sea again this time I saw a big ship I started waving it was coming for the Island Oh! could it be true would I be saved. The boat came and I got on how glad I was to be going home. When I got home I told everyone of being on the Island nobody believed me but I will always remember monkey some day I'll get my own boat and sail back to that Island.

Visit to the Department - Dorothy

Freddy the Robot

Freddy the robot is good fun when you are working it. We were allowed to work it and we both got a shot each. It picked up a black flat block and put it on a big block with a hole in it and pegged it in with a wooden peg. It can pick up blocks and lay them on top of another block. It can be controlled by a computer with a programme which tells it what to do and the two cameras would show on a screen what it was looking at. Then it would pick it up and it could be controlled with a control box which we used to make it pick up things. The table moves about by the touch of a button and it enables Freddy to pick up things. I enjoyed using it. Robert had a go first. He made it pick up a shape and he tried to make it lay it on top of another block but it droped of as the robots hands moved away. Then I had a go and I made it pick up a block the same size as a lot of the outher blocks then I moved the robots hands and laid it on another block the same size as it. I managed it.

Adventure While Travelling - Dorothy

Adventure in a Helicopter

My Adventure story is about a little girl and her father who was a pilot on a helicopter. He was taking his little girl to America to stay with her aunt. They were flying quite high when this strange piece of mist came towards them. The father tried to steer the helicopter away from it but he could not the helicopter would not move. It carried the helicopter back wards and as soon he knew he was in a place which was dark creepy and silent. They got out of the helicopter and started walking. They reached a little house which was the image of his own they went in there was a man a girl who was the pilots daughters age and a woman that looked exactly the same as his girls aunt he could not under stand what was happening but he was getting scared he cried for help but there was no help for them. They walked back to the helicopter and it took off he was steering the helicopter when he fell asleep and the helicopter cept flying he woke up in America and he shouted "Hello" to the aunt who was there to meet them. He could not remember any thing of which had happened. He took of and went back to England. When he went back to America to get his daughter he crashed at the very same spot as where the mist had come. He died instantly the little girl heard of what had happened and had to stay in America with her aunt. The End.

Fairground - Dorothy

The Fair

A field brightly coloured with flashing lights. Screaming is heard in every corner of the field. Around the Waltzers are masses of spectators some to frightend to go on. In the arcade there are bells ringing, buzzers buzzing and other unusual noises.

There are police strolling round the fair ground checking to see if there is any trouble. There are vans of all shapes and sizes selling ice-cream, hotdogs and hot drinks. There are queues around all the big mechanical objects which you can ride on.

Around the sides of the field there are stalls and shooting galleries. There is a mini zoo with all different animals of different sizes.

There is a band playing all sorts of tunes, there is a bingo stand where you can always hear someone calling "house". There is a ghost train on which young and old people are on and seem to be enjoying there selves.

There are races in the other field together with football and other stalls.

There has been an accident in the big field a girl has fallen out of the "twist" which goes round and round and in and out she musn't have been fastened in right. It has been a wonderful day but it has to end.

Island - Dorothy

The life boat was rocking suddenly I woke with a jurk to find that I was in a large bay on the side of an island. I rowed to the edge of the island I climbed out of the boat and tied the rope to a sharp rock. I began to climb up the walls of the bay. I noticed that north of the island was the mouth of a stream.

As I began to walk towards the stream I noticed that to the right of me was a sandy beach with big green palm trees round it. There was a path possibly made by animals. I walk beside the path which lead up a massive hill with a dense forest on the east side of it. The walk up the hill was tiring as it was quite steep on the south east side which was the side I was climbing up. On top of the hill was the beggining of a fresh stream in which I jumped it to and drunk quite a lot of.

When I came out of the water I lay and basked in the lovely hot sun in which I fell asleep. When I woke I saw quite a lot of animals crowding around me. When I stood up they all hurried away I walked down to the forest and started to collect wood and then took it down to the sandy beach. I began to build a small hut in which I could spend some of my time in until I was rescued. That night I was very restless in my small shabby hut so I got up and went to sit beside the blue rippling water. The air was cool and the moon shone brightly and reflected on the water. It was then I could sleep.

In the morning I had a lot of things to do so I got my camera which had had round my when the the ship began to sink. I wandered round the island taking pictures of animals and plants of which interested me. In the afternoon I went back up to the fresh stream to have a drink of the cool refreshing water. later that afternoon I wandered to the north west coast of the island there I saw a helicopter hovering over the island so I started to wave my arms and shout. I was lucky the men in the helicopter saw me, they landed and told me to get in. On the journey back they told me of how they had be given the SOS signal before the ship had sunk and that they had already found seventeen of us that had been on the ship they had been in groups on other islands.

The name of the island I was on was called Papeete which is one of the small islands in the Tuamotu Archipeligo.

Visit to the Department - Sharon

When we came to the artiefical inteligence we went up to a room and Mr Sharples told us we where going to see computers and Freddy the robot. We went to see a computer that read and drawed. Then we went to see Freddy Which is magnifcent I could never make anything like it he could pick up bricks and put them on top of each other and when it got to high he would knock them down. He could pick up a tracktor and leave it up side down. Some boys and girls where aloud to try Freddy. And Derek was aloud to press the buttons of the computer that drew. We so a computer which they were still working on and it was called Cecil.

Adventure While Travelling - Sharon

Helicopter

When it was my birthday instead of getting a party my mum made arrangements for me to go on a helicopter for 3 hours. It was great we were going over hills and rivers and trees and lots of thing then all of a sudden we heard crack and the pilot said keep calm put on your life Jackets the plane has cracked underneath and one of the wheels have come of so we cant land. We where above the sea and we had another mile or so before we came to land so the pilot kept on going trying to get to land or if not we would probly be gonners me and my mum were crying my dad was pure white and started yelling at all of. When we heard another cracking sound cracking sound we looked down and we so land we where all happy but it was`nt over yet the pilot shouted I cant hold it any more I felt the plane going down down I prayed to god to save us down down bang. The pilot had cut his self and we where a bit shaken up but other than that we where all right my dad shouted get out the plane could go up in flames and moment so we all jumed out and my dad help the pilot out we all ran and ran then we heard a big blast we looked behined us and so smoke and flames the helicopter was burt to a crisp and if we had have been a minute later so would we have as well but we had bean saved. All I could think about was me and my family had been saved we walked and walked we had no food or drink all that had bean left on the helocopter I was getting tired by this time so was every body else. Just by chance I so smoke so did everybody else I started to run by this time then we came to the door a old lady came out and said come in so we went in she bathed the pilots head and phoned for my uncle he came and drove us home we were all right I can tell you one thing that is the last time I go up in the air.

Fairground - Sharon

I can feel my tummy turning as I get nearer the clearing, I can hear the no 1 single blareing in the distance getting nearer and nearer, lights flashing all around blue, red, yellow,green, all flashing at the same time screaming, shouting wild children everywhere playing tig around the many many stalls. Men and women shouting "roll up roll up four balls for 20p try your luck with a goldfish roll up roll up" Old ladies, women, men sitting round in a circle with Boards in front listening to the rapidness of the lady who calls out blue 2 and 1 is 21. over and over. The high seats that go high up in the air you try to touch the sky but never succeed. Then the Ghoust train witch everybody dread to think about, as the the moveing chair starts to get closer to the door you dread to go through then it happens screaming and screeching ghosts bats rats bload skeletons everywhere spider that touch your head a make you scream then the door opens and your out in the open air. But then the men start taking everything down and the park gets quieter and quieter untill theres nobody left but the papers blowing about in the wind and the rubbish left by the people who enjoyed there self so much. yove left it all behind but youll always remember the night at the fair.

Island - Sharon

"It was thursday the 19th,Bengiman Briggs, had just woke up from his rough night at sea, and found that he had been maroonded on an island, Wich island,what island,he did not know." I dont know were to start its all so strange one thing it looks like a deserted island("but he was wrong")ill go for a swim its to late now for building a shelter. Splash splash splash. oh its lovly ("10 minutes later quite far away from the shore") ahhahhahh a whale splash splash splash _____splash knife splodge well least I will have meat for weeks. I better find a bed for the night ill try this path im comeing to forest this should be good for shelter, at last("it was right at the side of the forest were he found a nice place to sleep"). Morning im going to make me a fire so that if any planes come across they will be able to help save me.("an hour or so later") finished how`ll ill look for food if im not mistaken there was pamtrees in the distance im comeing to the end of the wood sssssssss what was that sssssssssa snake easy now got you well ive found my food and a bitten arm to go with it. I better get some leave to sooth it, now for the pamtrees here they are what lovly milk ill go back to my bed now and it the morning ill make me a cabin. bang boom bang boom bang boom what the heck is that. I thought I was alone I was proved wrong. oh know its pulled all the trees down over my bed i`ll just have to sleep rough tonight thats if I get to sleep and something tells me i wont. boom bang boom band its coming back for me oh its hairy its eyes are like soucers no please not me no please ahahhahhahhe _____.mmmmmmmmm my head I feel as if I had been hit over the head with a brick,oh I remember that hairy freak now i`ll have to escape, but how. I know i`ll shout help hes sure to hear then i`ll run in a diffreant direction climb up a tree and stay there. good I fulled him, whats that I hear a plane get back to my fire no matched thats great.ill just have to try stone wood rub great its alight whooo watch those flames hear it comes help help help help. its seen me I dont believe it but its true, oh god that hairy freak its comeing and the plane surely cant make it please quick, Bengiman ive told you already get up youll be late for school.

Visit to the Department - Derek

Fist of all we came into this room and there was a computar it was like a tipewrites . Mr. Sharpils tiped something and it said Hello there. Welcome to the Department of Artiphical Intelligence. And then Mr Sharpils took us down stairs to see some more computars . Nigel and tiped some things and this Micheane Moved about. And then Mr Sharpils took us to see the robbot the robbot picked up blocks it can only pick up six blook but it can pick up other things up his name is Ferrdie the robbot he is 10 years old, And there was onother robbot named cecil.

Adventure While Travelling - Derek

When I was on holiday some men came into the train and we were meant to go to Berwick and they said if we don't get to newcastle they would shoot us so the Driver took them to newcaste and then we had to get another train to Berwick and we got there and eight day later we got a bus to Dunbar and a train to Edinburgh but on the train we were going the other way and we asked the man if this was the train to Edinburgh and he said no so we just had to stay on the train but the man must have been only joking beacause we got into Edinburgh.

Fairground - Derek

A Day at the Fair

All noisy pushing music and I just stand there watching the Californian surf ride. Then it suddenly stops then I decide to go on it, it starts very slow then it gets faster and faster then it starts bumping then it stoped then I went to the Mexican hat I went on it, it was very scary as you go up and down then that stoped. Then I went to the rot-or I went inside and it went round and round then the floor came away and we were all sticking to the wall then I went to the dodge ums then I had no money left so I went home.

Island - Derek

My ship has hit the rocks,My ship is sinking quickly I jump into my life-boat the sea is rough I try to row back to my ship but the sea is to rough, quickly the waves carry me down and away. Suddenly I fall a sleep, then I wake up, It is morning and I find my self on a Island. The palm trees are blowing the stream is flowing. Then in the cliffs I see some caves, the caves lead to a hill, were the stream is. I am all cold and shivery all I have on is a vest and trousers no shoes or socks, I wondered of into the darkness, then I came to a village were, Men Women and children lived,I had to stay in a Hotel. Early next morning I woke up and left the Village I had no were to go and nothing to eat.At night I saw a ship, away in the disttance I was being recudedat last.

Visit to the Department - Kevin

The robots name is Freddy. He has two arms the two arms can lift bricks and put them in a stack but he canot get more than six beacause his arms donot go up far enough. They are working on an other robot called cecil and it will take about anothe two years to finish him.

Adventure While Travelling - Kevin

I was on a plane flight 504 to Spain when we stopped to re fuiel. Three men and a woman hi-jacked us and made the captain fly the plane to Egypt. We stayd at Cairo airport for six days we didn't have mach to eat beacause the hi-jackers were mean and nasty. At one time they held the captain at gun point he said he would kill him if they didnt get some petrol but the police said no. They shoit him and they said will you give us some petrol the said yes but how would you drive the plane. So they said some peopl for a captain they said the police said no we want twenty peopl I was one of the twenty that got free.

Fairground - Kevin

Fairground Fun

Scream shout all about the noise is terrible all over the fair ground "roll up roll up" "come on 2p a throw". Get those lights on we wont our bisiness just like you. That is my space move your caravan.

Come on sir have a go only 5p you could win a golly wog come on every body lots of prises to be wone. A prise every time. Look at this the star attraction the roter wacth em stick to the wall no need to be frightined the little ones will like it to. Mummy it was great fun at the fair.

Island - Kevin

There I was floating on the north side of an Island. I new this because during the storm I manged to get a compas. Then I stood and that was my first sight of land it seemed pretty far away but I was determond to reach it. Then I saw another island so I serched the boat for a map I found one under a canipey I found it. Then the one on my right was called Halo and the thre was called Upolu. Halo was inhabited by canibils but Upolu was inhabited by animals. So I chose Upolu when I landed there was a fresh watter stream I rowed as fast as I could until I hit the shore I rushed to the stream and drank as fast as I could five minutes later I followd the stream until I reached the top of the hill. It was a dence forest but in the farest the were lots of palm trees and lots of wild bore I have lived there ever since.

Visit to the Department - Anne

When we went down to see Freddie the robot we all went into this big room and we had to sit behind the red line and the lady showed us where his eyes were and she told him to pick up a brick and pile all the bricks up and when he had piled up five he could not make his arms go any higher so he knocked the bricks down then he picked up the steamroller and put it on top of a piece of wood. He has two long arms and two camera's for his eyes his brain was in a drawer, the heaviest he can lift up is ten pounds. Freddie took two years to make and cost about one hundred thousand pounds Now they are making another robot called Cecil that can lift up smaller things.

Adventure While Travelling - Anne

When I got the letter saying that I had won the crossword competition and the prize was $10 and a trip in a helecopter on the Tuesday I was so excited and I ran through to tell my mum and she did not believe me at first, then I showed her the note, I could not wait until Tuesday. I went into school on Monday and I told all of my friends then the bell rang and I told the janitor then I went upstairs and gave the teacher the note saying I would be absent from school on Tuesday and she asked me why I was going to be off and I told her and she said I was very lucky then at last Tuesday came and the man came around for me at half past nine and took me to the helecopter it made an awful noise with the propellers going around and I got in and the men were talking on a radio and we took of . When I looked down it looked like one big patch work quilt surrounding the whole world then suddenly the propellers stopped I screamed but the men were just trying to scare me and I found out they had kidnapped me and I fainted when I woke up they were carrying me out I was terrified so I pretended not to be awake they took me into a room and there was a lady, then they all went out and left the door open and I got up and ran to the helecopter and jumped in and pressed the button saying prop.sta and the proppellors started and up I went I dont no what happened next I must have been knocked out because I found myself on a boat that had found me half drowned in the sea and they could not understand me I knew They were French and I wished my mum was there because she could speak french but there was nothing for me to do but they knew I was English and they found someone English and I told them the whole story and they phoned up my mum and she sent over my fare to come back and I am never going in for any more compotitions I can tell you. and they caught the kidnappers and they were put in prison for three years.

Fairground - Anne

I am standing near the Surfer, watching all of the people paying, then climbing into the empty cars, then it starting up and everybody screaming and the loud music, children eating toffee apples and Candy Floss holding flags and balloons. It is getting late the children leave and only adults are left to spend money.

The ghost train goes in and you hear screaming, then out comes frightened passengers. Only a few people remain now, the screams die down, the shows pack away, only a few people remain, walking, through the quiet empty shows that will be alive once more.

I remembered the penny arcade,the children shouting, winning money, losing money, I remembered how the people screamed on the big wheel which they would do again the next day.

The children who had spent or lost there money watched and listened to the other people spending money and screaming on the Rotar and how much they longed to go on, those children would return the next day with more money ready to go on everything they saw.

Island - Anne

I have just woken up I am on the shore of a sandy beach there is some palm trees near by. I am getting quite hungery, I think I will go along this path, I have ended up in this jungle maybe I can find some wild fruit.

I have found enough fruit to keep me alive for a few days. I shall see where this path goes to. A fresh water river! I could make a basket or a container to carry water back to the life-boat, so I made some baskets which I weaved out of some reeds which I found at the side of the river, and I collected the water in the baskets.

When I got back to the life-boat I decided that I needed some shelter in case of any bad weather, and I thought it a good idea to have it quite near the river and the jungle, so I made it beside the river and near to the jungle where it would be easier for me to collect food and water.

I made the shelter out of bamboo canes and palm tree leaves. The bamboo canes as the frame and the palm tree leaves as the roof, then I got some long reeds from the side of the river and wove them in and out of the bamboo canes so that they served as walls. When I had finished I stored more food and water enough to last me for at least a week then I decided to explore the island. As I was exploring the island I found a wild goat and its kid which I managed to get back to my hut.

When I got back to my hut I make a sort of pen to keep the goat and kid in then for the first time I tried to milk a goat. I found it very difficult for the goat kept on kicking, but I soon got the hang of milking it.

I managed to feed the goat and its kid on grass and fruit I also gave it water to drink.I thought I was doing quite well and I never thought of trying to escape until I had been there for about a week and a terrible storm blew up and blew down my hut and my goat and its kid escaped, then I saw a ship in the distance I ran up and they took me aboard.

The next thing I knew I was lying on a soft bed with a hot drink and plenty of food, I realised I had been rescued and I was told we were about to land on the west coast of Australia, then I was taken to hospital, and soon after that the world knew my story.

Visit to the Department - Saras

I have seen Freddy the robot today. He can put bricks on top of each other and move about but he can't talk his brain is kept in a big box and he has two eyes and he is very clever he can carry up to 10 pounds his weight I think Im not sure and if you want to make him it will take you 3 years and he costs to much money hundreds of thousands of pounds the man said. and we even saw the computer that was being repaired and on the ground we saw a little machine that could draw any kinds of shapes triangle squares circles any kind of shapes and it has a pen trailing under it so that it can draw. The other Robots name is cecil he's a bit smaller than Freddy. Freddy put five bricks on top of each other and we had a shot of the controls.

Adventure While Travelling - Saras

If your on holiday lots of adventures can happen. like the car breaks down or if your in a plane and it has a crash or it might even be a train crash if your on that. Or if your on a motorbike and its run out of petrol and then you'll have to push it to a garrage. Or if you're a long distance lorry driver lots of things can happen cause youll have to deliver things to factorys or towns and citys like Edinburgh Glasgow or even Newport things like that. You'll have to drive on busy roads and lots of accident's happen on the way like cars or vans or lorrys crash into each other. So you'll have to be extra careful on road manely main roads that have lots of vehicles running about the place. Sometimes if your traveling by car to towns anywhere you have to stop and ask somebody the way to the place where your going so my dad keeps a map in his van so he doesn't get lost in the middle of nowwhere. If your in a ship out in the meditranean and suddenly the ship begins to sink and you have to wear waterproof jackets on the rubber dingys. For the ones that can't swim and can't save them selfs and swim. So theres lots of adventures that can happen when you travel. If your a tourist and traveling by bus amd some one highjacks you and poits a gun at you with their masks on and drive's you in a desert where its very warm and burning hot and there isn't an oasis there and you have to find one so theirs lots of things that can happen on holiday.

Island - Saras

Seven o`clock in the morning I woke up the sun was shinning brightly in my eyes. We were on a ship there was lots of people on the ship they were all having breakfast and I had mine too. When suddenly there was a big roar of wind coming towards us and we hurried and cleaned everything up. The wind was roaring loudly and I got very scared and the waves were coming nearly reaching to the top of the boat.

The wind crashed against the boat and the waves were crashing too so we tried to stop the boat from sinking and suddenly crash we crashed in to a big rock in the middle of the sea. Some people swam for their lives. But I had a life boat and I rowed the boat for a long time so I got tired and I fell asleep in the boat.

The next morning I woke up and I found myself at the edge of an island and so I got up and had a look round the island it was a beautiful island it had palmtrees hills and even a stream. After a little while I began to feel hungry so I looked for something to eat I found a coconut lying in the sand it must of fell from the the palmtree to I split it open with a big rock and I began to eat when suddenly I saw a helicopter coming towards me so I waved my arms about and I made some fire for it to be the signal but it didn`t see me or the signal so I just ate my coconut. After that it was night and I made myself a little cosy hut in between the palmtrees and fell asleep until morning. When morning came I said to myself Ill explore the island to see what I can find but I found nothing but little insects lying about on the shore then suddenly I found a brooch it just looked like mine when I wore it on my dress when I saw the island so I looked on my dress and the brooch wasn`t there and I looked at the back of the brooch and it had my initials T.K. so it was mine because I got it as a birthday present of my grandfather so I put it on my dress and then suddenly I saw a ship out in the see my mother and father were on it so I waved my hands and shouted over here. The ship came to the island and I went in the ship and I went home.

Visit to the Department - Nigel

Today we went to see Freddie the robot. He can pick up blocks of wood and make towers. He can do other things like pick up wooden cars and make things with wood. We went there with Mr Sharpies and there were two women and two other men already in the room. One of the woman showed us how it worked and how Freddie does things. He was making a tower and when he got as far as he could go they all fell down. In the middle of seeing Freddie the fire bell went off it wasnt a real fire though it just went off by mistake. There was another little robot there called cecil he could move and do things as well. ithink Freddie's branier than our whole school put together.

Fairground - Nigel

Fairground

The noises of the fairground merry,go,rounds, helter skelters, the big wheel, flashing lights green, blue, red, orange, big shows, small shows, fast shows, slow shows, noisey shows, quiet shows, just round the corner amusements, 1p, 5p, 10p put it in pull handel bell,bell,cherry try again pull handel bell,bell,bell ive won back to the shows on the ghost train whoooooo on the big dipper up,down,up,down,under,over, try the fun house ha,ha,ha, on the waltzers round and round and round getting of feeling sick buy an ice cream time to go goodbye fair.

Visit to the Department - Richard

Fredy is a robot that can do thing like a am going to tell you about. It plays with toys and it picks up bricks. We were watching it picking up bricks and puting them into a pile. And it looked at the pile and decided it was to big so it nocked them down and started again. And then the fire alarm went and we had to go away but when we were going a man came and said that he was just testing the alarm so we went in and started to ask questions.

Adventure While Travelling - Richard

My Hollidays

On my holliday I was at the air port. I was at Prestwick air port with my sister she went to America and the plane came six hours late and we had to wait. It was supposed to take of at half past twelve but they delaid it to half past one and it one oclock the said that the plane would be delaid untill 6 oclock so we got read for a long wait. At six oclock the plane arrived and Jane my big sister got on the plane. We had to wait an hour before the plane took of and we got out of the air port at 7 oclock and got home at quarter past 9 and then I got my supper watched the tv and then went to my bed. When I was going back for her I got up at 20 to 4 am and arived at the air port at hald past 5 and her plane was supposed to come in at six oclock and at 5 to six we went upstairs to se the plane land and it had alread landed early.

Fairground - Richard

At the fair the thing I enjoyed most was the Rotor. In the Rotor there was about 16 squares and every body was to stand in one. I stood in one beside my friend and the floor started to go up and then suddenly the floor dropt.

When the floor droped you stuck to the wall as it went round. And when it stoped you slid down the wall. If you wanted you could watch it and se what it was like but it cost 20p and it was only 25p a shot on the thing.

So after a went on that I went on the surfer and that was good it was a round thing with a big bump in it and the car would go over it and it would fly up and then fall on the other sid of the bump.

Island - Richard

I woke up after last night my head was throbbing and I had been washed into a lagoon beside a small Island. Some how I had the strength to get on to this Island and explore it. After quiet a long time I descovered that I hadnt seen enyone on this Island and decided to go and look for fire wood and build a fire.

So I built the fire and hoped that someone would spot it one day pased and I woke up next morning feeling verry hungry. So I went to look for food and water after a while I found a streem and tasted the water and luky for me it was fresh and so I drank some water and went to look for some food.

After a while I came acros a hill in the middle of the Island and there was edible plants on it It so happened that I was a dab hand with plants and I knew how to cook them. So after that I went and got some more fire wood and built another fire and about midday I hellicopter rescued me and I will never go out in a boat again.

Visit to the Department - Robert

We went into a big air conditioned room and there was a big moving table with a big metal board with two armlike things sticking out that had metal clips on the end. We saw someone switch it on then the table moved because the computer was controlling it. Freddy the Robot is what its called and it is a good robot we had a go of controlling it. We had a box and it has switches on it and we pushed them to work it. I tried to pickup a big block of wood and put it on a smaller one and it slipped of the little bit. Dorothy put two bits of wood on each other. When we controlled it we had a knob to change its direction and speed and we had buttons. We had one to make the table go forward and backward we had one to make it go left and right we had 3 to control the robot. The robot had a scanner and two cameras one on the side and one looking down. after that we saw the model of Cecil which is freddies predessesor it has smaller fingers than Freddy and it it like an arm. When we saw him we saw Eliza which talks to you and you answer it.

Adventure While Travelling - Robert

Sailing Adventure

We were half way in the pacific oceon then a storm started. The boat got tossed around to port and starboard north south then we hit a reef and the boiler room exploded. It left a hole that stretched from its boiler to the captians cabin the captian half the crew and 1 thousand passengers died imedeatly the Others wounded the survivor got 16 lifeboats out of the wreckage and were carried out to sea. Britain "Reports are coming that the titanic has blow up?" We were still out in the ocean steadily drifting east back toward Britain but just then we spotted a periscope the submaring surfaced it was a U boat It fired in a moment it was over I lost an arm an 15 boats were lost 50 of us where on a small life boat in the pacific ocean without food or water. then we heard a buzzing noise. the next thing I woke in something like well I dont know what it was like but it was a U.F.O. . I was the only person alive the rest had had been killed by those monsters. they picked me up brought me through to a room produced their lazers and fired I dodged an picked up a lazer fired 2 times and killed them then I blew a hole in it and jumped I landed in the outdoor swimming pool in heathrow I was dregged out and taken to the police and put in custody but I was let go the nextday I went home to Edinburgh and live an old man then I was taken ill so I traveled to America to see a famous doctor but when I was cured I was travelling with president Nixon but the car I was in got blown up And I died in hospital.

Fairground - Robert

The boy walked onto the machine and sat down and it started so did the other machines and the fairground started. It was like one big engine chugging all its steam out of its system. Then the roller-coaster started it was like a great big caterpillar shuddering as each carriage passed over it. Then the big wheel started shuddering as life was poured into it. The Ghost Train started 3 people jumped in then they were plunged into darkness and then a skelerton appears or streamers hit their faces.

So the side shows appear like timid moused opening their eyes but it was shutters for the shows when the shooting started males poured over to it. When more machines started more people came pouring in through all the gates. Then the excitement began screams and music was the backing sound and shouting kids but then a bell went a loudspeaker voice the power behind the fair ordered everyone out so they went. Two people climbed over the gate to see if they could break in but there was dogs so the fair finished.

Island - Robert

I woke up with a bump and found that I had drifted to one of the islands in the Archpeligo,I did not know what one it was and I went to explore. The first thing I came across was some palm trees and as I made my way through them some parrots began to squawk. I was alarmed but when I saw it was only parrots I did not mind. Even though I did not know if there was dangerous things here I still picked up a large stick in case. Then I discovered a well used path made not by humans but by animals. I discovered that they were made by animals because I saw a cloven footprint on the path and many more beside that. I then came to the tropical forest at the foot of the hill I made my way through it. It was not very dense and it was not long till I was out then I heard a plane hurriedly I took of my shirt and fitted on to the stick I waved frantically but it was in vain, in the excitement of hearing it I did not notice it was a jet.

When I reached the top of the hill I saw there was a stream starting from a rock in the hill I took a drink and tried to pull the rock away I struggled frantically until I eventually pulled it out. The water kept flowing there was no way in the hill so I made my way back the way I came back to my boat and rowed a bit round the island past a bay and then came to the cliff I jumped out my boat and went to explore a bit I saw three caves and went into the middle one it got darker and darker soon I was stumbling around in the pitch darkness. Then I heard the stream and daylight I took a deep breath and climbed I got to the hill and fainted. When I woke up it was dark so I huddle up for the night.

I woke up getting licked by a deer and I cuddled it it was surpised but to my amazement when I let it go it did not run instead it grabbed my shirt and pulled I went with the deer and it took me to the beach then it jumped into the water so I followed it and we swam around then I noticed my boat was gone but surprisingly enough I did not mind I just kept on playing with the little deer. Then I heard a boat so did the deer and it ran I ran after it and got it then the boat came nearer it was a coast-gaurd patrol boat who had picked up my boat 2 days ago and had been searching for 1 day. The deer got frightened but I held it tight then we sailed away from the island and me and the deer went back to civilisation.

APPENDIX 5

FIRST VERSION OF THE "HAUNTED HOUSE" STORIES
WITH THE CHILDREN'S REVISION ANNOTATIONS.

FINAL VERSION OF THE "HAUNTED HOUSE" STORIES.

James

On a stormy night in 1907 two campers were running down a windey country road. Suddenly in front of their eyes a poor old man appeared. He said to them in a stubborn, croaky voice,"If your'r lookin for shelter, there's an ~~old~~ (ancient castle) (mansion) down the road, turn left and your there, but be careful it's ! itssss"."Somehow he's gone, that's funny". The campers did what the ~~old~~ (elderly) man had told them, and they found the ~~old~~ mansion. The gates were solid iron, luckily they were open enough that the campers could slip through. They both started walking up to the mansion doors and they saw a sign which said RING BELL BEFORE ENTERING OR DEATH.The rest of the writing had faded away. The campers rang the door bell and ~~an old~~ (he was wearing a dinner jacket and tails) man opened the doors, and said,"What do you want". They answered,"We only want some food and a roof over us for the night. The old butler agreed and showed them up to there (their) room. The door was oak and it had a metal door handle. They both entered there room and found two 4 posted bedrooms, with bedclothes all ready for them.Somehow the butler had walked in the room and said"Dinner is ready. The campers asked if they could have it in there room. Two minutes later the butler arrived at the door with two trays on a trolley. They had both got tucked into there (their) dinner when suddenly one of the campers pulled out a 3 inch nail from his chicken. There was some blood on the end. He put the nail in his rucksack and then he went to his bed. The two campers had gone to bed and fallen asleep but they were lucky to be under there covers because the butler walked into ~~there~~ (their) ~~room with a bread knife~~ and slipped out again. They had leaned on a button and fallen down a trap door. In the middle of the night they both found themselves at the bottom of a pit. Then suddenly a bunch of

monsters started approaching them slowly. There was a

jolly wobbles

slithery blobs

slimey bubbles

werewolfs

Draculas

Mummy's

and slimes.

They all gobbled up the campers and went back to there dungeons.

James

THE (FAMOUS) NIGHTMARE MYSTERY.

On a stormy night in 1907 two campers were running down a windey country road. Suddenly in front of their eyes a poor old man appeared. He said to them in a stubborn, croaky voice,"If your`r lookin for shelter, there`s an ancient castle down the road, turn left and your there, but be careful it`s ! itssss"."Somehow he`s gone, that`s funny". The campers did what the elderly man had told them, and they found the mansion. The gates were solid iron, luckily they were open enough that the campers could slip through. They both started walking up to the mansion doors and they saw a sign which said RING BELL BEFORE ENTERING OR DEATH.The rest of the writing had faded away. The campers rang the door bell and man opened the doors (he was wearing a dinner jacket and tails) and said,"What do you want". They answered,"We only want some food and a roof over us for the night. The old butler agreed and showed them up to their room. The door was oak and it had a metal door handle. They both entered their room and found two 4 posted bedrooms, with bedclothes all ready for them.Somehow the butler had walked in the room and said"Dinner is ready. The campers asked if they could have it in their room. Two minutes later the butler arrived at the door with two trays on a trolley. They had both got tucked into their dinner when suddenly one of the campers pulled out a 3 inch nail from his chicken. There was some blood on the end. He put the nail in his rucksack and then he went to his bed. The two campers had gone to bed and fallen asleep but they were lucky to be under their covers because the butler walked into their room with a bread knife and slipped out

again.

In the morning they both got up and yawned. Then they started to dress. Suddenly one of the campers found blood at the corner of the bedroom wall. The wall had plain whitish wall-paper, but it was a bit grotty with cobwebs and dust. Then after the campers had got dressed they heard the breakfast bell ringing. Then they both hurried quickly down the stairs and into the dining room. Beside the dark brown oak table before them stood a kitchen maid. She said to them in a squeaky voice, "If you'd both like please breakfasts are coming". They could smell some bacon and they could hear it sizzling away. After they had eaten, both of them went for some fresh air. One camper made towards the big oak tree forests. He shouted to his friend to hurry up and come with him for a walk through the forest. He never got an answer, so he started towards the bushland. Suddenly he heard some scuffling behind a gorse bush. He thought he saw a man running away. The camper felt dizzy, then he fainted. When he woke up he found himself surrounded by werewolfs. He muttered a word, and the beasts killed him. They were shaped like a man and they were hairy. Then suddenly he woke up in his bed in his tent and there beside him was his sleeping friend. So all the werewolves, the castle and the blood were just one big dream.

Dorothy and Louise

A detective came to an old haunted manor house, ~~because~~ he was going to investigate ~~the haunted house.~~ the murder of a friend ~~Because a friend's body had been found there.~~ The friend had been murdered while staying over night. He was staying there because he was a ghost hunter. ~~He~~ He came because he wanted to find the Mummy of Tutankamen. He was found murdered beside Tutankamen's tomb. The detective walked up to the wooden porch of the big ~~house~~ manor, he knocked at the ~~big~~ large oak door, the door opened with a enormous creaking sound. An old butler appeared and asked" Whom seeketh thou this evening?". Suddenly ! a ~~big~~ giant black bat flew down from the lintel above the oak door. The detective asked"May I enter?" He STEPED walks in....

As he tread walks up some of the spiral stairs... He hears a scream he runs into a small room he sees a corpse lying on a four poster bed. He hears fast footsteps behind him.... The door opens in stamped walks frankenstein. The detective runs through a door which leads to a dining room the table is set for four three places are filled one with the green lady one with the butler the other with oozy slime. The green lady asks him to join in the feast. He walked walks towards the table and sits down. The slime starts to wobble he gets up and run to window... It is locked he creeped walks slowly towards green lady she screams he runs towards the door and disappeared goes back down He spiral stairs. He sees a door he departed goes through it leads into a dark dingy kitchen, in the kitchen there was a chief chef, he had an enormous kitchen knife in his hands. He runs towards detective,* detective runs towards small stairs which leads to cellar he looks towards Tutankamun's tomb he has a scrole in his hand the detective picks up the scrole and begins to read the* scrol! scrole says

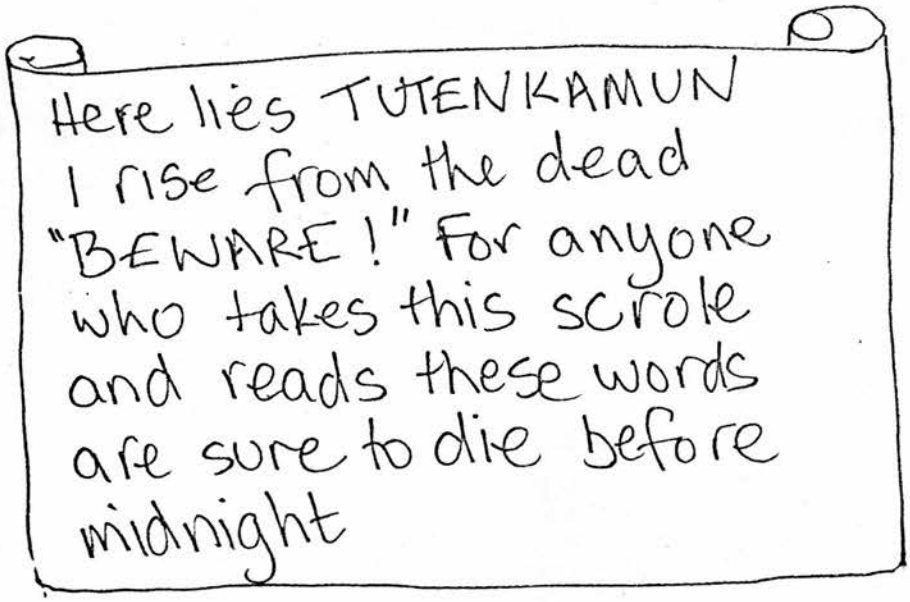
Dorothy and Louise

TUTENKAMUN'S CURSE

A detective came to an old haunted manor, because he was going to investigate the murder of a friend. The friend had been murdered while staying over night. He was staying there because he was a ghost hunter. He came because he wanted to find the Mummy of Tutankamen. He was found murdered beside Tutankamen's tomb. The detective walked up to the wooden porch of the manor. He knocked at the large oak door, the door opened with a enormous creaking sound. An old butler appeared and asked" Whom seeketh thou this evening?". Suddenly ! a giant black bat flew down from the lintel above the oak door. The detective asked "May I enter?" He stepped in....

As he treads up some of the spiral stairs... He hears a scream he runs into a small room he sees a corpse lying on a four poster bed. He hears fast footsteps behind him.... The door opens in stamps frankenstein. The detective runs through a door which leads to a dining room the table is set for four three places are filled one with the green lady one with the butler the other with oozy slime. The green lady asks him to join in the feast. He walks towards the table and sits down. The slime starts to wobble he gets up and run to window... It is locked he creeps slowly towards green lady she screams he runs towards the door and disappears back down the spiral stairs. He sees a door he goes through it leads into a dark dingy kitchen, in the kitchen there was a chef, he had an enormous kitchen knife in his hands. He runs towards detective, detective runs towards small stairs which leads to cellar. The detective looks around the cellar he

doesn't see anything suddenly in the corner of his eye he sees a sparkle he walked towards the sparkling gem he noticed that it was the handle of a scroll he picks it up an begins to read the scroll it says.....



Suddenly he hears a creaking from a funny shaped box.....

Next day he was found by police dead with the scroll in his hand beside Tutenkamun's tomb. Now the detective knows what happened to his friend.

Sharon

THE MYSTERY OF THE WEIRD NOISES

I am a detective I have come to the house of mystery because on December the 25th there were strange noises coming from the house. Its probably just bats or rats but I don't think so the something funny going on the house looks dull and damp. There is a wooden door it looks as if it has not been used for years whats that noise chairs rattling oh god what is this house its getting nearer ~~a man he has no head~~ he's headless. Oh ~~god~~ good. He didn't see me good. A bedroom cobwebs everywhere click somebody locked me in there is a women at the far end there is a women she is green her teeth are red shes coming for me gun weres my gun? here bang bang bang bang, she not dead but shes went ran away the bullets went through her. oh ah I've ~~fell~~ fallen through the door to a dark pitch there's scuffling going on A rat oh my god ~~they are~~ it's as big as me, bang its dead. I here somebody coming down the steps I better hide theres a box click this is quite nice and comfy tap on the shoulder good morning I say good morning pause ahh dracula. ~~The pit is filled with mummies~~, bats, skeletons, ghosts, corpses, werewolf, ahh they told me not to come hear 3 detectives have came here and never been seen again, but Im one of the those people once they get a mystery they wont let it go.

SHOLLYM

* try to escape ~~ever~~ every way I look there is. *

Sharon

I am a detective I have come to the house of mystery because on December the 25th there were strange noises coming from the house. Its probably just bats or rats but I dont think so the something funny going on the house looks dull and damp. There is a wooden door it looks as if it has not been used for years whats that noise chairs rattling oh god what is this house its getting nearer a man he has no head. Oh god. He didn't see me good. A bedroom cobwebs everywhere click somebody locked me in there is a women at the far end there is a women she is green her teeth are red shes coming for me.Gun weres my gun here bang bang bang bang she not dead but shes went away the bullets went through her oh ah ive fell through the door to a dark pitch theres scuffling going on rat oh my god they are as big as me bang its dead I here somebody coming down the steps I better hide theres a box click this is quite nice and comfy tap on the shoulder good morning I say good morning pause ahh dracula. The pit is filled with mummies bats skeletons ghosts corpses werewolf ahh they told me not to come hear 3 detectives have came here and never been seen again but Im one of the those people once they get a mystery they wont let it go.

APPENDIX 6

WORKSHEETS

WORKSHEET 1 — WORDS IN STRANGE WAYS

This is the first of a set of worksheets on forming sentences. With this worksheet you will look at the ways in which words can be put together to form sentences, poems and stories.

First, read over this story:

Pat always wanted to be a poet. She read poetry books, climbed mountains and gazed at sunsets in the hope that they might inspire her to write beautiful poetry, but nothing happened. Finally, in desperation, Pat set about building a machine to write poetry for her.

First she collected a hundred blank cards and on each one she wrote a single word, such as 'rose' or 'sunset' or 'floating', which looked as if it might fit easily into a poem. Then she built a large tub, balanced on a complicated arrangement of springs and levers, and threw into it all the cards. By pulling a rope she was able to shake up the cards and let them drop out, one by one, onto a large sheet of paper, with the words face upwards.

Finally Pat copied down the words and sent the resulting poem off to a poetry magazine.

1. DO YOU THINK THAT PAT'S MACHINE WOULD WRITE GOOD POETRY. WHY ?

.....

.....

.....

.....

The Word Box holds 50 cards, each with a word on it. You can use this Word Box to pick words in the same manner as Pat's Poetry Machine.

2. WITHOUT LOOKING TAKE A CARD OUT OF THE WORD BOX. WRITE DOWN ITS WORD IN BOX 1. CARRY ON REMOVING CARDS FROM THE WORD BOX AND COPYING DOWN THE WORDS INTO THE SPACES BELOW UNTIL YOU HAVE TAKEN OUT 15 CARDS.

1	2	3	4	5	6	7	8

9	10	11	12	13	14	15

DO THE WORDS YOU HAVE WRITTEN DOWN MAKE A SENSIBLE SENTENCE?

.....

IF NOT, CAN YOU MOVE ROUND SOME OR ALL OF THE CARDS TO FORM A SENSIBLE SENTENCE? TRY IT. FORM THE CARDS INTO AS MANY SENSIBLE SENTENCES AS POSSIBLE AND WRITE EACH ONE DOWN BELOW

1. .....

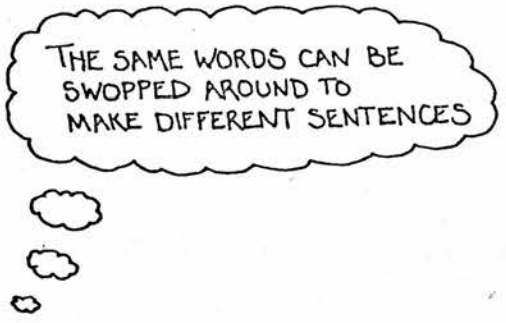
2. .....

3. .....

4. .....

5. .....

NOW WRITE DOWN SOME INTERESTING WORDS ON NEW BLANK CARDS AND PUT ALL THE CARDS BACK IN THE WORD BOX READY FOR THE NEXT PERSON



WORKSHEET 1 — PAGE 3

PAT - THE COMPUTER PROGRAM

There is a computer program, called PAT, which will pick out words from a 'Word Box' stored inside the computer. You can use it to try and create poems.

When PAT is ready it will show a W: on the screen. This means it is waiting for you to type. To put words in the Word Box type *put* and press the green button.

3. PUT IN THE FOLLOWING WORDS: *cat dog the sees* BY TYPING

YOU TYPE THESE WORDS

W: *put* (PRESS GREEN BUTTON)

WORDS: *cat dog the sees* (PRESS GREEN BUTTON)

COMPUTER RESPONSE

PUT FINISHED

To take words out of the Word Box you type *get*. The computer will then ask for the NUMBER OF WORDS IN A LINE. You type in a number. It will then ask for the NUMBER OF LINES in the poem. You type in another number.

4. GET SOME WORDS OUT OF THE WORD BOX BY TYPING

W: *get* (PRESS GREEN BUTTON)

WORDS IN A LINE: *2* (PRESS GREEN BUTTON)

NUMBER OF LINES: *3* (PRESS GREEN BUTTON)

(THE COMPUTER TYPES WORDS HERE)

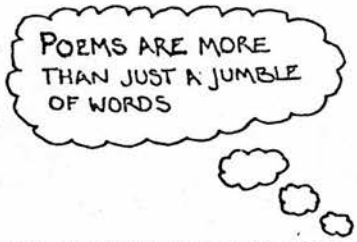
GET FINISHED

NOW PUT MORE WORDS OF YOUR OWN CHOICE INTO THE WORD BOX USING *put*. THEN USE *get* TO WRITE POEMS OF DIFFERENT LENGTHS. WRITE DOWN ALL THE POEMS PRODUCED BY PAT ON THE NEXT PAGE.

IF YOU WANT TO CLEAN OUT THE WORDS BOX AND START AGAIN WITH NEW WORDS THEN TYPE *clear* WHEN THE COMPUTER GIVES THE W: SIGNAL.

WORKSHEET 1 PAGE 4

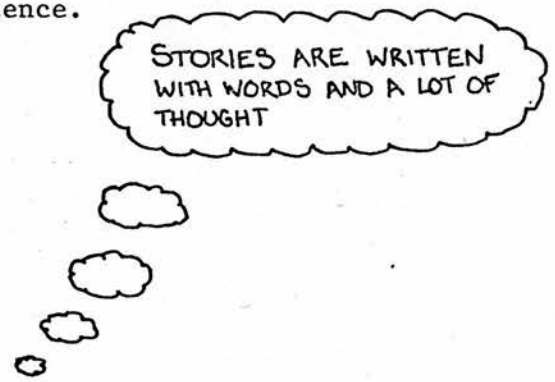
POEMS:



5. IN WHAT WAYS ARE THE POEMS AND STORIES THAT YOU WRITE BETTER THAN THOSE WRITTEN BY PAT?

WOKSHEET 1 PAGE 5

You have seen that picking words in any order is not a good way to write poetry, or stories. A good writer chooses words carefully so that they make sense and are interesting to read. She does this by thinking about the *type* of a word, about *similar words* and about the *order* of words in a sentence. In the next worksheet we shall look at some of the different types of words that make up a sentence.



WORKSHEET 2 WORDS IN ORDER

With Worksheet 1 you picked out words in no particular order and, of course, the poems made no sense. Now we will look at the different *parts of speech*, for example *nouns* and *verbs*, and use them to make more interesting poems.

Pat is still struggling with her poetry machine:

Pat soon received a letter back from the editor of the poetry magazine. It read:

> "We regret that your poems, although very unusual, are too mixed up and confusing to be printed in our magazine. I suggest that, in future, you think more about the order of the words in your poetry".

That seemed to Pat to be very sensible advice - after all, the cards had tumbled out of the machine in no particular order. So she thought about ways to improve the poetry machine - she thought in the bath, she thought standing on her head and she thought with her eyes shut and fingers in her ears. Finally an idea leapt into her head: by sorting the words into the different parts of speech she could command the machine to pick them out in a more sensible order.

She first divided the huge tub into smaller boxes and then sorted the word cards according to their parts of speech - she put the card marked 'flower' into the 'noun' box, the card marked 'shines' into the 'verb' box and so on. Each box had the name of a part of speech written on it in large letters and, by pulling a rope on the correct box, a word dropped onto the table below.

Pat tested the machine; it worked perfectly, but she still had one large problem - in which order should she pull the ropes?

---

1. TRY AND DRAW A PICTURE OF PAT'S NEW POETRY MACHINE ON THE NEXT PAGE.

You can make new Word Boxes for parts of speech. Here are some examples of different parts of speech:

dog : *noun* eats : *verb* stupid : *adjective* quickly : *adverb*
sitting : *participle* but : *conjunction* the : *article*
on : *preposition* me : *pronoun* clouds : *noun* you : *pronoun*
wanted : *verb* so : *conjunction* some : *adjective* together : *adverb*

WORKSHEET 2 PAGE 2

2. TAKE THE WORDS ONE BY ONE FROM THE OLD WORD BOX AND PUT EACH ONE INTO A NEW 'PART OF SPEECH' BOX. FOR EXAMPLE - 'CAT' WOULD GO INTO THE 'NOUN' BOX, 'BLACK' INTO THE 'ADJECTIVE' BOX.

A WORD CAN BE ONE OR MORE PARTS OF SPEECH

SOME WORDS CAN GO IN MORE THAN ONE BOX. FOR EXAMPLE 'LIGHT' CAN BE A:
NOUN - MARY SHONE THE LIGHT IN MY FACE.
ADJECTIVE - THE LIGHT FEATHER FLOATED TO THE GROUND.
VERB - PLEASE LIGHT THE FIRE.

WITH WORDS LIKE THIS, MAKE COPIES ON BLANK CARDS AND PUT THEM INTO MORE THAN ONE BOX.

IF YOU CAN'T DECIDE WHICH BOX THEN THINK WHERE YOU PUT A SIMILAR WORD

IF YOU CANNOT WORK OUT THE PART OF SPEECH THEN PUT THE WORD INTO A 'DON'T KNOW' BOX.

NOW, IN WHICH PART OF SPEECH BOX WOULD YOU PUT THESE WORDS?

ELEPHANT.....	RUNS.....	HUGE.....
MADE.....	POETRY.....	AND.....
I.....	LIFE.....	RED.....
FIGHT.....	UNDER.....	STUPIDLY.....

Now that you have sorted the words into parts of speech boxes, the next step is to decide how the parts of speech should be put together to make a sentence.

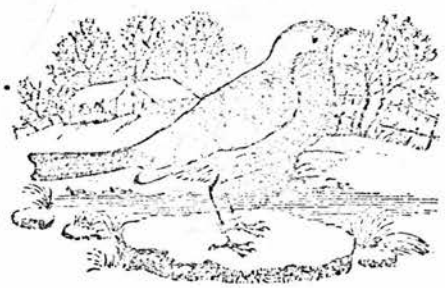
What is a good word order? Pat was faced with the same problem:

Pat knew very little about the order of words, so she fetched a poetry book and turned to her favourite poem:

WORKSHEET 2 PAGE 3

The Robin

On the swing in the garden,
The robin sits.
He has a red breast,
All fluffed-out.
He is shivery and cold
In the snow.
A sad spiky ball of feathers.
He shakes
The flakes
From his head.
He flies to the window ledge
And twitters,
Crying for food.



Below each word in the poem she wrote its part of speech:

ON	THE	SWING	IN	THE	GARDEN
Preposition	*Article*	*Noun*	*Preposition*	*Article*	*Noun*

and so on.

Now she had a word order – Preposition, article, noun, preposition, article, noun. *She ran over to the machine and tugged on the ropes in that order. The words tumbled down onto the table and she copied them into her notebook. 'This looks more like poetry' thought Pat as she wrote the address of the poetry magazine on an envelope.*

3. HERE IS THE FIRST PART OF PAT'S POEM AGAIN:

ON	THE	SWING	IN	THE	GARDEN
PREPOSITION	ARTICLE	NOUN			
UNDER	A	FLOWER			

THE	ROBIN	SITS

HE	HAS	A	RED	BREAST

ALL	FLUFFED-OUT

HE	IS	SHIVERY	AND	COLD

IN	THE	SNOW

BELOW EACH WORD, WRITE DOWN ITS PART OF SPEECH. WHEN YOU HAVE DONE THAT, MAKE UP A POEM OF YOUR OWN BY PULLING WORDS OUT OF THE CORRECT PART OF SPEECH BOXES AND WRITING THEM IN THE BOTTOM SPACE. THE FIRST THREE WORDS HAVE ALREADY BEEN FILLED IN FOR YOU.

NOW COPY OUT THE POEM THAT YOU HAVE PRODUCED:

.....

.....

.....

.....

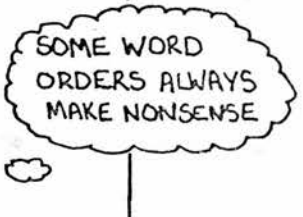
.....

.....

4. WITHOUT LOOKING INSIDE THE WORD BOXES WRITE DOWN SOME WORDS THAT MIGHT GO WITH THESE PARTS OF SPEECH:

ARTICLE	ADJECTIVE	NOUN	VERB	ADVERB

NOUN	ARTICLE	PREPOSITION	VERB	NOUN	ADVERB



PRONOUN	VERB				
NOUN	PRONOUN	ADVERB	NOUN	ARTICLE	
ARTICLE	NOUN	VERB	PREPOSITION	ARTICLE	NOUN

5. CAN YOU COMPLETE THIS CROSSWORD BY FILLING IN A WORD FOR EACH PART OF SPEECH, SO THAT THE SENTENCES ACROSS AND DOWN ALL MAKE SENSE?

ARTICLE	ADJECTIVE	NOUN	VERB	ARTICLE	ADJECTIVE	NOUN
NOUN		VERB		ADJECTIVE	NOUN	VERB
VERB		ARTICLE		NOUN	VERB	ADVERB
	ARTICLE	NOUN	ADVERB	VERB		

With this worksheet you have looked at the different parts of speech in a sentence. In Worksheet 3 you willuse the parts of speech and a new computer program (called PAT2) to make more interesting and sensible poetry.

WORKSHEET 3 POEMS FROM PAT2

With Worksheet 2 you sorted words into parts of speech and used them to write more interesting poetry. Doing it yourself takes a long time. Fortunately, there is a computer program, called PAT2, which chooses words according to their parts of speech.

How to use PAT2

When PAT2 is ready and waiting for you to type, it will show a W: on the screen. You can then put words into its part of speech boxes with the *put* command. PAT2 asks first for a part of speech and then for words. For example, a noun might be 'boy', 'girl', 'tree' or 'river'. Between each, you must type a \.

1. PUT PARTS OF SPEECH INTO PAT2 BY TYPING:

YOU TYPE THESE WORDS

THE COMPUTER TYPES THESE WORDS

W: *put*	(PRESS GREEN BUTTON)
PART OF SPEECH: *noun*	(PRESS GREEN BUTTON)
WORDS: *boy \ girl \ ice cream \ river*	(PRESS GREEN BUTTON)
PART OF SPEECH: *verb*	(PRESS GREEN BUTTON)
WORDS: *sees \ eats \ hears*	(PRESS GREEN BUTTON)
PART OF SPEECH: *article*	(PRESS GREEN BUTTON)
WORDS: *a \ the*	(PRESS GREEN BUTTON)
PART OF SPEECH: (PRESS GREEN BUTTON TO END 'PUT')	

PUT FINISHED

REMEMBER TO TYPE A \ BETWEEN THE WORDS

The words 'boy', 'girl', 'ice cream' and 'river' have been put in the 'noun' box; the words 'sees', 'eats' and 'hears' have been put in the 'verb' box and 'a' and 'the' have been put in the 'article' box. You can now tell PAT2 to take words out of the part of speech boxes by typing *get* and then listing the parts of speech.

2. GET WORDS OUT OF THE BOXES BY TYPING:

get	(PRESS GREEN BUTTON)
WORD ORDER: *article noun verb article noun.*	(PRESS GREEN BUTTON)
WORD ORDER: (PRESS GREEN BUTTON TO END 'GET')	

(THE COMPUTER TYPES WORDS HERE)

GET FINISHED

3. USE PUT TO ADD NEW WORDS OF YOUR OWN TO PAT2'S PART OF SPEECH BOXES. THEN OPEN NEW BOXES FOR 'ADJECTIVE', 'PREPOSITION', 'PRONOUN', 'ADVERB' AND 'CONJUNCTION' AND PUT WORDS INTO THEM. ONCE YOU HAVE DONE SO, YOU CAN TYPE THE 'GET' COMMAND TO PRINT OUT WORDS IN THE SAME ORDER AS THE 'ROBIN' POEM, WHICH IS:

PREPOSITION ARTICLE NOUN PREPOSITION ARTICLE NOUN,
ARTICLE NOUN VERB.
PRONOUN VERB ARTICLE ADJECTIVE NOUN,
ADJECTIVE ADJECTIVE.
PRONOUN VERB ADJECTIVE CONJUNCTION ADJECTIVE
PREPOSITION ARTICLE NOUN.

THE WORD ORDER OF THE 'ROBIN' POEM

WRITE DOWN THE POEM THAT YOU HAVE MADE BELOW:

.....

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4. INVENT A NEW PART OF SPEECH ORDER (PERHAPS BY LOOKING UP A POETRY BOOK) AND USE IT TO MAKE POEMS, WHICH YOU CAN COPY ONTO THE NEXT PAGE.

You have your own *memory bank* inside PAT2 where you can store words and their parts of speech until the next session. To command PAT2 to save your parts of speech and words, type *save* when the W: appears. PAT2 will then ask for the name of your memory bank and the words that you want to save.

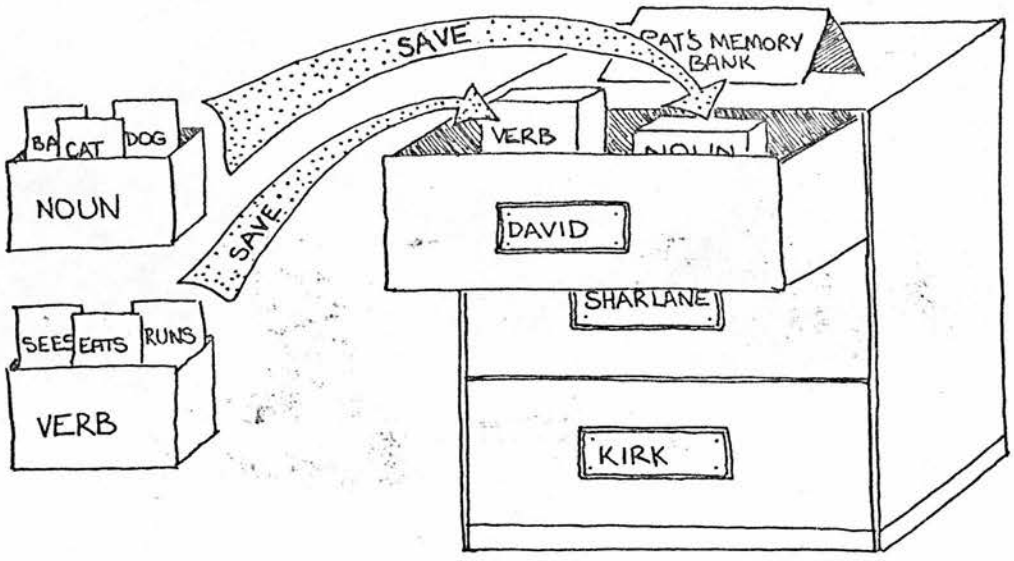
5. SAVE YOUR WORDS IN YOUR OWN MEMORY BANK BY TYPING:

W: *save*
NAME OF MEMORY BANK: (TYPE YOUR OWN NAME EG. "DOREEN" AND PRESS GREEN BUTTON)
PARTS OF SPEECH TO BE SAVED: *all* (PRESS GREEN BUTTON)
SAVE FINISHED

TYPE 'ALL' SINCE YOU WANT TO SAVE ALL YOUR PARTS OF SPEECH.

IF YOUR NAME IS 'NIELS' THEN TYPE 'NEILS' AFTER 'NAME OF MEMORY BANK'.

WORKSHEET 3 PAGE 3



Save makes a copy of your words and their parts of speech in your own memory bank. Having saved them you can say *goodbye* to PAT2.

In this worksheet, you used PAT2 to write poems by typing in the part of speech for each word. The poems look more like English, but are still not very interesting, partly because PAT2 can only choose from the few words that you typed into it. With the next worksheet you will use a big *dictionary* of words and their parts of speech to form better poems.

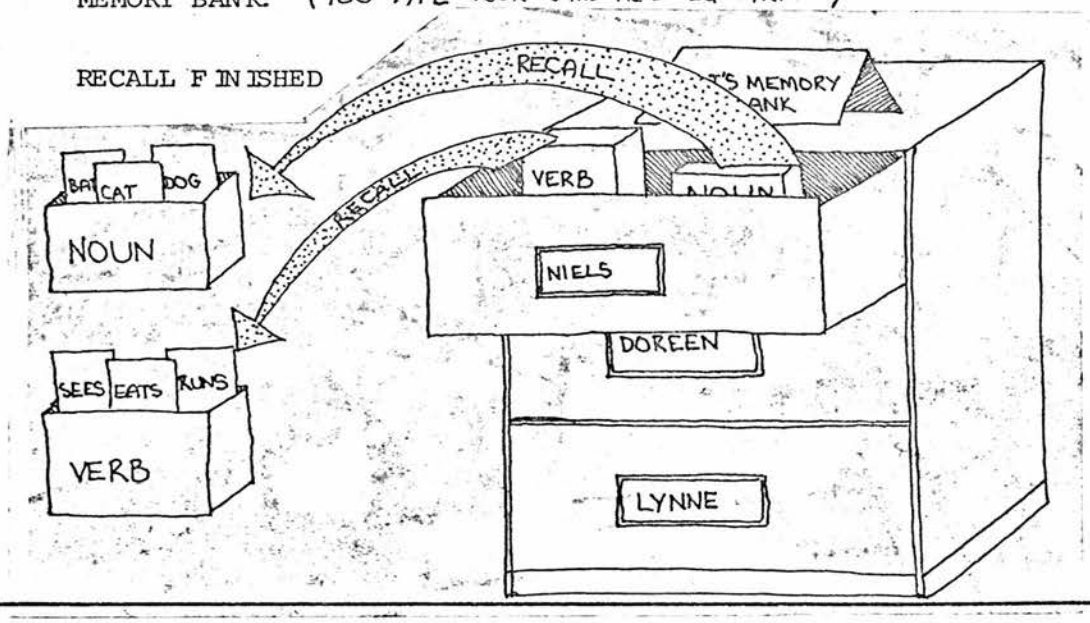
WORKSHEET 4 SAVE AND RECALL

The words which you remembered using the *save* command will still be in your personal memory bank. With this worksheet you can *recall* them and add new words from PAT2's own dictionary.

1. GET BACK YOUR WORDS AND THEIR PARTS OF SPEECH BY USING THE 'RECALL' COMMAND:

W: *recall*

MEMORY BANK: (YOU TYPE YOUR NAME HERE - EG. "LYNNE")



Your words and their parts of speech from last session are now ready for you to use. You can command PAT2 to *show* you the parts of speech (in case you have forgotten them).

2. SHOW YOUR PARTS OF SPEECH BY TYPING:

W: *show*

(THE COMPUTER WILL TYPE OUT ALL THE PARTS OF SPEECH HERE)

SHOW FINISHED

NOW USE THEM TO MAKE A POEM WITH THE 'GET' COMMAND:

W: *get*
ORDER: *article noun verb*
ORDER: *preposition article noun*
ORDER:

(THE COMPUTER WILL TYPE THE "POEM" HERE)

As well as personal memory banks PAT2 has a *dictionary* which holds a large number of words and their parts of speech. You can recall from the dictionary by using the *recall* command again.

3. RECALL NEW WORDS AND THEIR PARTS OF SPEECH FROM PAT2'S DICTIONARY BY TYPING:

W: *recall*
MEMORY BANK: *dictionary*

RECALL FINISHED

YOU CAN NOW USE THE NEW WORDS FROM PAT2'S DICTIONARY TO WRITE MORE INTERESTING POEMS. TRY WRITING SOME POEMS USING 'GET', BUT WITH YOUR OWN WORD ORDER. COPY OUT THE BEST ONE BELOW.

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LOOK AT THE POEM YOU HAVE MADE AND THEN LOOK AT SOME POEMS IN A POETRY BOOK. WHAT DIFFERENCES DO YOU SEE?

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EXTRA WORKSHEET 1. SILLY STORIES

You can use PAT2 to write not only poems but also silly stories. First you must give PAT2 the outline of the story, with some of the words replaced by their parts of speech. Here is an example:

> This is a tale about a *adjective* man called Mr. *name* who lives *adverb* in a *adjective* house with a *noun*, two *nouns* and a *adjective noun*. He often *verb adverb* as he is an extremely *adjective* person. Every morning he *verb* and then *verb adverb* out of the window. On Sundays he *verb* to his next door neighbour Mrs. *name* who *verb* back to him.

You can command PAT2 to automatically choose a word for each part of speech - but not always a sensible one! Try it.

1. USE 'RECALL' TO GET THE STORY OUTLINE FROM PAT2'S MEMORY BANK:

   W: *recall*
   NAME OF MEMORY BANK: *story*

   RECALL FINISHED

   THEN USE THE GET COMMAND TO PRINT OUT THE STORY WITH PARTS OF SPEECH:

   W: *get*
   WORD ORDER: *story*
   WORD ORDER:

   (THE COMPUTER WILL TYPE THE STORY HERE)

   GET FINISHED

   NOW, IN ORDER FOR PAT2 TO FIND WORDS FOR THE PARTS OF SPEECH YOU MUST RECALL THE DICTIONARY.

   W: *recall*
   NAME OF MEMORY BANK: *dictionary*

   RECALL FINISHED

FINALLY, YOU CAN COMMAND PAT2 TO PRINT OUT THE STORY WITH A DICTIONARY WORD FOR EACH PART OF SPEECH.

W: *get*
WORD ORDER: *story*

(THE COMPUTER WILL TYPE THE STORY HERE)

GET F IN ISHED

You can make up silly stories of your own by typing *get* and then writing a story, but with parts of speech instead of some of the words.

2. USE PAT2 TO WRITE OUT A SILLY STORY AND THEN COPY IT OUT BELOW. PUT A CIRCLE ROUND THE WORDS WHICH PAT2 HAS ADDED FROM ITS DICTIONARY.

.....

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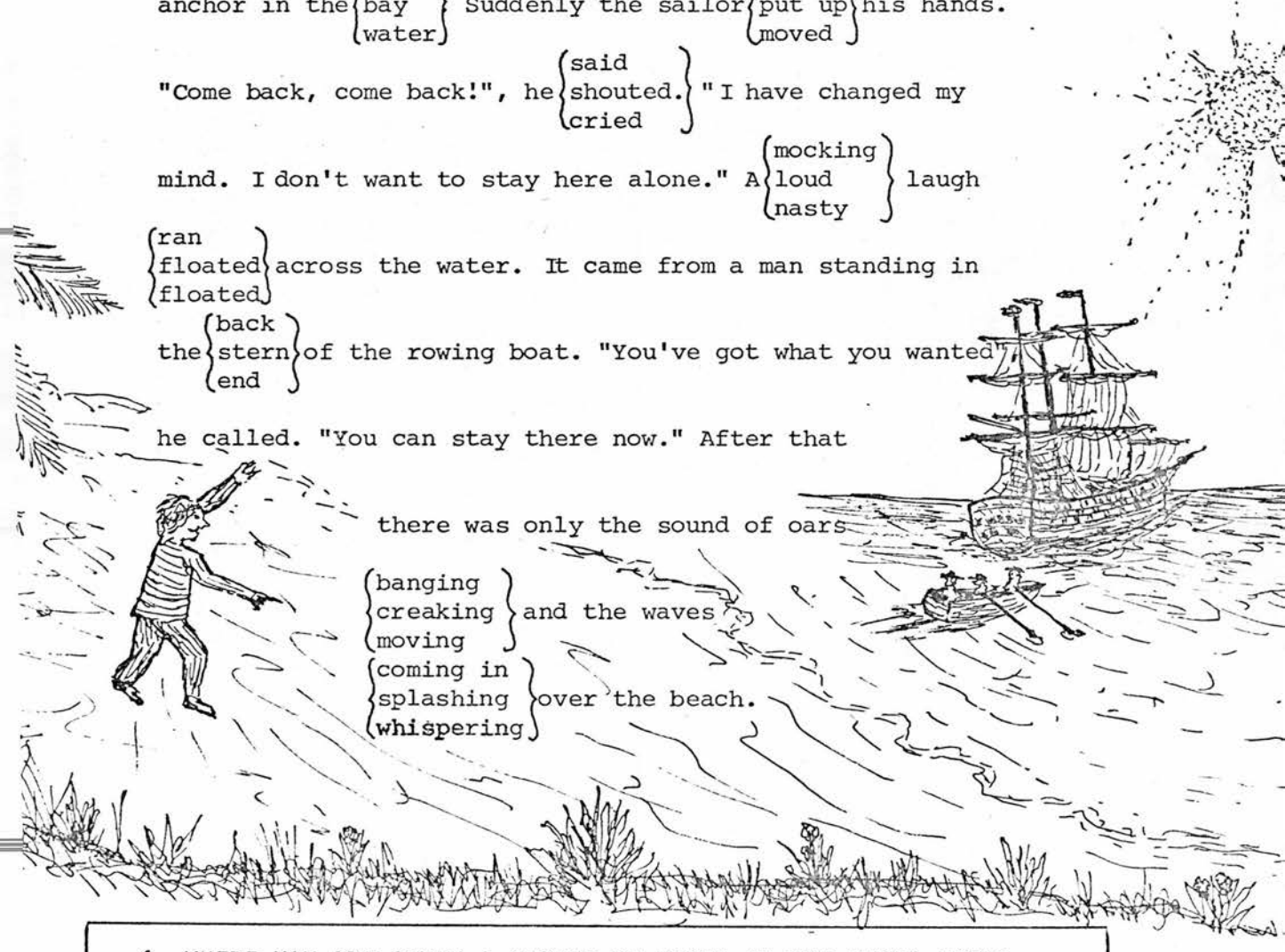
WORKSHEET 5 IN OTHER WORDS

This next set of worksheets will be about *style*. If an essay or story has good style then it will be lively, interesting and readable. If the style is bad then the story will be dull, boring and difficult to read. In order to write with a good style you must choose your words carefully. For, example, here is part of a story about a man left behind on a tropical island:

On the {beach / shore / sand} of the tropical island, where {deep blue / soaking wet / strong silent} waters lapped the white shore, a lone {sailor / man / seafarer} stood. He was {watching / looking at / seeing} a rowing boat draw farther and farther away from him, heading for the {tall ship / huge sailing ship / big boat} which stood at anchor in the {ocean / bay / water}. Suddenly the sailor {raised / put up / moved} his hands. "Come back, come back!", he {said / shouted. / cried} "I have changed my mind. I don't want to stay here alone." A {mocking / loud / nasty} laugh {ran / floated / floated} across the water. It came from a man standing in the {back / stern / end} of the rowing boat. "You've got what you wanted," he called. "You can stay there now." After that there was only the sound of oars {banging / creaking / moving} and the waves {coming in / splashing / whispering} over the beach.



1. WHERE YOU ARE GIVEN A CHOICE OF WORDS IN THE STORY ABOVE,

WORKSHEET 5 PAGE 2

PICK THE ONE WHICH BEST SUITS THE STORY, BY CROSSING OUT THE OTHER TWO CHOICES.

Below is a ghost story. The first two sentences are complete, but the rest have words missing.

It was a cold night. The wind on the moor was howling. As I _____ in bed, I was _____ about _____ to my _____ _____ which was _____. Then we would _____. Suddenly my _____ were _____. Above the _____ of the _____, I _____ a _____ _____ _____. I _____ and _____ a _____ _____ _____ with two _____ _____. The first _____ that _____ through my _____ was "_____!". This _____ seemed to be _____ and _____. I _____ the light switch and _____ the _____ and to my _____ I found what my _____ was. I had _____ the window open and the _____ was _____ the _____ _____ and _____. The eyes were two _____ in the curtain.

You can use the PAT2 computer program to help you fill in the missing words.

2. WHEN PAT2 GIVES THE W: PROMPT TYPE:

W: *recall*
NAME OF MEMORY BANK: *ghost*

RECALL FINISHED

THIS GETS BACK THE GHOST STORY FROM PAT2'S MEMORY BANK. NOW YOU CAN INSTRUCT PAT2 TO WRITE ONE VERSION OF THE STORY BY TYPING:

W: *get*
WORD ORDER: *story*

WORD ORDER:

WORKSHEET 5 PAGE 3

PAT2 will now type out the story. The blanks will be filled in with example words, but they may not be the best ones. You must first make out a *rough copy* of the story and then try to imporove it by changing some of the words.

3. USE THE STORY WRITTEN BY PAT2 TO COPY DOWN WORDS INTO THE SPACES ON THE PREVIOUS PAGE. THIS IS THE ROUGH COPY OF YOUR STORY.
NOW YOU CAN TRY TO IMPROVE THE STORY BY CHANGING SOME OF THE WORDS YOU HAVE JUST WRITTEN DOWN. AGAIN PAT2 CAN HELP YOU. IF YOU TYPE:

W: *story*
WORD ORDER: *sent3*
WORD ORDER:

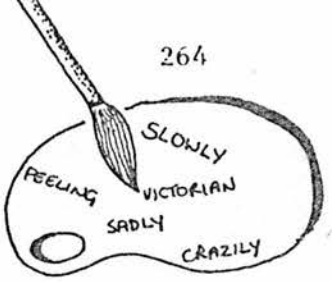
THEN PAT2 WILL WRITE THE THIRD SENTENCE OF THE STORY, BUT WITH DIFFERENT WORDS IN PLACE OF THE BLANKS. IF YOU TYPE *sent4* THEN IT WILL WRITE OUT SENTENCE 4 AND SO ON. USE PAT2 TO MAKE DIFFERENT VERSIONS OF EACH SENTENCE.

NOW CHOOSE YOUR OWN WORDS FOR THE BLANK SPACES, TO MAKE UP AN INTERESTING AND FRIGHTENING GHOST STORY. YOU CAN USE PAT2 TO GIVE YOU IDEAS FOR WORDS TO FILL IN IF YOU WISH. WRITE YOUR FINAL COPY OF THE STORY BELOW:

It was a cold night. The wind on the moor was howling. As I _____ in bed, I was _____ about _____ to my _____ _____ which was _____. Then we would _____. Suddenly my _____ were _____. Above the _____ of the _____, I _____ a _____ _____ _____. I _____ and _____ a _____ _____ _____ with two _____ _____. The first _____ that _____ through my _____ was "_____!". This _____ seemed to be _____ and _____. I _____ the light switch and _____ the _____ and to my _____ I found what my _____ was. I had _____ the window open and the _____ was _____ the _____ _____ and _____. The eyes were two _____ in the curtain.

WORKSHEET 6

WORD PICTURES



With the last worksheet you looked at ways of altering a story to improve its style. This worksheet is about one kind of writing style - descriptive writing. Descriptive writing is like painting a picture with words. Let's say a story contained this sentence:

She looked round the room, at the wallpaper, the bookcase and the writing desk.

You get some picture of the room from that sentence, but a poor one. Is the room modern or old-fashioned? Is the furniture small and neat, or large and untidy? Now look at this sentence:

She looked slowly round the room, at the damp peeling wallpaper, the bookcase sagging under volumes of leather-bound novels and the heavy Victorian writing desk.

Now you have a better picture of the old damp room. The words which create this picture include:

SLOWLY DAMP PEELING SAGGING LEATHER-BOUND HEAVY VICTORIAN

1. WHAT PARTS OF SPEECH ARE THESE WORDS?

.....

You can use PAT2 to play a 'description game'. First you must recall the game from PAT2's memory bank.

2. RECALL THE DESCRIPTION GAME BY TYPING:

W: *recall*
NAME OF MEMORY BANK: *description*
RECALL FINISHED

Now if you type *get* and then a sentence PAT2 will replace each adjective by a * and each adverb by a ! but it will not spot unusual adverbs and adjectives. For example:

W: *get*

WORD ORDER: *The tiny aeroplane spun crazily in the air and*
WORD ORDER: *crashed into the hard frozen earth.*
WORD ORDER:

****

The * aeroplane spun crazily in the air and crashed into the * frozen earth.

****

Here PAT2 has spotted the adjectives *tiny* and *hard* , but not the adjective *frozen* or the adverb *crazily*.

3. TRY OUT THE DESCRIPTION GAME. HERE ARE 5 SENTENCES. YOU MUST CHANGE THEM INTO MORE INTERESTING DESCRIPTIONS, AND WRITE THE NEW SENTENCES ON THE DOTTED LINES. THEN TYPE EACH SENTENCE INTO THE COMPUTER, USING 'GET'. SCORE ONE POINT FOR EACH UNUSUAL ADJECTIVE, WHICH THE COMPUTER MISSES, AND TWO POINTS FOR EACH ADVERB.

1. The man sat on the bench.

.....

..... SCORE

2. The girl saw the house.

.....

..... SCORE

3. The shark swam towards the beach.

.....

..... SCORE

4. The aeroplane flew under the bridge.

.....

WORKSHEET 6 PAGE 3

.....

SCORE

5. The boy looked round the graveyard.

.....

.....

SCORE

Adjectives and adverbs, especially unusual ones, help create an interesting 'word picture', but you can describe a scene in other ways. Look at these two sentences:

John sat down on the chair.

With a sigh, John flopped into the chair.

There are no adjectives or adverbs in the second sentence, but it is a better description than the first one.

4. WHAT DOES THE SECOND SENTENCE TELL YOU ABOUT JOHN?

.....

NOW WRITE SOME SENTENCES, BY CHANGING 'JOHN SAT DOWN ON THE CHAIR', THAT WOULD DESCRIBE JOHN AS:

HAPPY .....

.....

AN OLD MAN .....

.....

A LITTLE BOY .....

.....

YOU CAN ALTER 'JOHN SAT DOWN IN THE CHAIR' IN ANY WAY YOU WISH. USE ADJECTIVES AND ADVERBS, AS WELL AS COLOURFUL WORDS LIKE 'FLOPPED' AND 'WITH A SIGH' TO DESCRIBE THE SCENE.

WORKSHEET 6 PAGE 4

When you describe a scene think carefully about the words you use - are they interesting? Do they give the reader a clearer picture of the scene?

WORKSHEET 7 ,*!PUNCTUATION?!.

Punctuation is important. It helps the reader to understand a story. Without punctuation, a story is very difficult to read.

1. LOOK OVER YOUR DESCRIPTION OF THE WAXWORK. WRITE DOWN BELOW ALL THE PUNCTUATION MARKS WHICH YOU USED.

2. READ OVER THIS PASSAGE. THEN, USING THE 'GUIDE TO PUNCTUATION', FILL IN THE PUNCTUATION. ALL THE PUNCTUATION MARKS YOU WILL NEED ARE LISTED UNDERNEATH THE STORY. CROSS OFF EACH ONE AS YOU USE IT.

james i jordan an american born australian claims to have invented a smell meter i am visiting all the main cities in europe he said so far oslo is the least smelly paris is next followed by berlin athens and london in that order

PUNCTUATION MARKS:

A	A	A	B	E	I	I	J	J	L	O	P	S	.	.	.	.
'	,	,	,	,	,	,	"	"	"	"						

The Punctuation Game

You can use the computer to play a 'punctuation game'. There is a program which will automatically take out all the punctuation from a story. First you must *recall* the program from PAT2's memory bank.

3. RECALL THE PUNCTUATION PROGRAM BY TYPING:

W: *recall*
NAME OF MEMORY BANK: *punctuation*

NOW, LOOK IN THE BOOKS PROVIDED AND FIND PART OF A STORY WITH INTERESTING PUNCTUATION. TYPE *get* AND THEN ENOUGH OF THE STORY

TO USE 20 PUNCTUATION MARKS.

W: *get*
WORD ORDER:
TYPE IN YOUR STORY PART HERE
WORD ORDER:

WHEN PAT2 HAS RETYPED THE STORY WITHOUT PUNCTUATION, PICK A PARTNER. ASK YOUR PARTNER TO COPY THE WORDS ONTO A BLANK PAD, FILLING IN THE ORIGINAL PUNCTUATION. NOW COMPARE THIS WITH THE ORIGINAL STORY. YOUR PARTNER SCORES ONE POINT FOR EACH PUNCTUATION MARK IN THE CORRECT PLACE.

THEN SWOP ROUND - YOU TRY TO FILL IN THE PUNCTUATION FROM YOUR PARTNER'S STORY.

WRITE DOWN YOUR SCORES HERE:

STORY 1: STORY 2: STORY 3: STORY 4:

4. FINALLY TAKE THE DESCRIPTIONS WHICH YOU WROTE LAST WEEK AND SWOP YOURS WITH ANOTHER PERSON. READ THROUGH YOUR PARTNER'S DESCRIPTION AND FILL IN ANY PUNCTUATION THAT YOU THINK HAS BEEN MISSED OUT.

From now on, when you write a story, read it through and add punctuation to make the sentences easier to read.

THE HANDY DO-IT-YOURSELF GUIDE TO PUNCTUATION

mrs ethel rodgers from east london opened a pint of milk and screamed help the bottle contained a dead mouse why was she worried no harm could have come to her said mr e w steel the manager of the dairy we make sure that every bottle and everything inside it is completely clean

1. Sentences.

Chop the story into sentences. Put a full stop after each sentence and a capital letter at the start of the next one. To discover where a sentence ends, read the story to yourself. Add a full stop wherever you pause, before the story continues with a new idea.

Mrs ethel rodgers from east london opened a pint of milk and screamed help. The bottle contained a dead mouse. Why was she worried. No harm could have come to her said mr e w steel the manager of the dairy. We make sure that every bottle and everything inside it is completely clean.

2. Questions and exclamations

If the sentence is a question, then change the full stop at the end to a question mark. If it is an exclamation (like Help!) then change the full stop to an exclamation mark.

Mrs ethel rodgers from east london opened a pint of milk and screamed help! The bottle contained a dead mouse. Why was she worried? No harm could have come to her said mr e w steel the manager of the dairy. We make sure that every bottle and everything inside it is completely clean.

3. Names

Put a capital letter at the start of a name (of a person or place, for example).

Mrs Ethel Rodgers from East London opened a pint of milk and screamed help! The bottle contained a dead mouse. Why was she worried? No harm could have come to her said Mr E W Steel the manager of the dairy. We make sure that every bottle and everything inside it is completely clean.

4. Abbreviations

Add a full stop after an abbreviation (such as *Rd.* for *road*).

Mrs. Ethel Rodgers from East London opened a pint of milk and screamed help! The bottle contained a dead mouse. Why was she worried? No harm could have come to her said Mr. E. W. Steel the manager of the dairy. We make sure that every bottle and everything inside it is completely clean.

5. Speech

Mark out the speech. Use commas to separate the speech from the speaker and then put quote marks round the spoken words. Start each new piece of speech with a capital letter.

Mrs. Ethel Rodgers from East London opened a pint of milk and screamed, "Help!" The bottle contained a dead mouse. "Why was she worried? No harm could have come to her," said Mr. E. W. Steel the manager of the dairy. "We make sure that every bottle and everything inside it is completely clean."

6. Parts of Sentences

Put in commas to separate the parts of a sentence (where you would take a short pause in reading).

Mrs. Ethel Rodgers, from East London, opened a pint of milk and screamed, "Help!" The bottle contained a dead mouse. "Why was she worried? No harm could have come to her," said Mr. E. W. Steel, the manager of the dairy. "We make sure that every bottle, and everything inside it, is completely clean."

7. Other Punctuation

There are other, less common, punctuation marks.
Brackets ( ) mark out extra information:

Mrs. Smith (age 47) was eaten by a lion yesterday.

The semi-colon ; breaks up a long sentence into smaller ones:

Mr. Brown dashed out of the house and ran for the bus; he missed it by two minutes.

The colon : is used to introduce a list or quotation:

Dickens wrote many books including: "David Copperfield", "The Tale of Two Cities" and "Oliver Twist".

The dash - is sometimes used instead of brackets to mark off part of a sentence:

He walked slowly down the road - his foot was very sore - and sat down on the bench.

WORKSHEET 8 USING WALTER

WALTER stands for Word ALTERer. With WALTER you can:

* Type in a story to the computer.
* Correct the spelling and punctuation.
* Look up a *thesaurus* for new words.
* Improve the style of the story.
* Print out a final neat copy.

When WALTER is waiting for a command it will type W: . To add a new story you use the command *new*.

1. TRY TYPING IN A SHORT SENTENCE, FOR EXAMPLE:

```
W: new
STORY: The dog jumped over the lazy cow.
STORY:                    ← press 'return' to finish
NEW FINISHED
```

Now you can type the command *change* to correct spelling, change words or add punctuation, for example:

```
W: change
OLD WORDS: lazy cow
NEW WORDS: stupid cat
OLD WORDS:          ← press 'return' to finish

**********************************************************

 The dog jumped over the stupid cat.

**********************************************************
```

2. WRITE DOWN BELOW THE CHANGES NEEDED TO ALTER *The dog jumped over the lazy cow.* TO *The brown cow jumped over the moon.*

```
OLD WORDS:
NEW WORDS:
```

OLD WORDS:

NEW WORDS:

OLD WORDS:

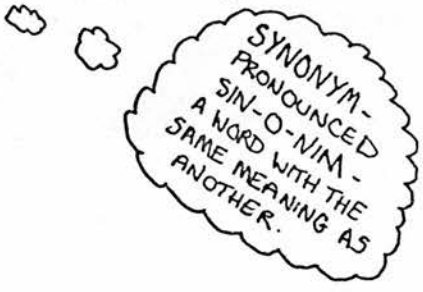
NEW WORDS:

When you have finished altering a story you can print it out using the *print* command.

3. PRINT OUT THE NEW SENTENCE USING THE *print* COMMAND.

WORKSHEET 9 THESAURUS: WORD BOOK; STORE OF WORDS

This worksheet tells you how to use the computer's *thesaurus*. The thesaurus contains a large list of words and their *synonyms* (words with the same meaning). It can help you to pick interesting and exact words for a story. It is called by typing the command *thesaurus* (or *thes* for short). For example, if you want to find words which mean the same as *old* then you type:



W: *thes*
WORD TO BE LOOKED UP: *old*

OLD: ANCIENT, AGED, MATURE, ELDERLY

1. SEE IF YOU CAN BEAT THE COMPUTER AT THE *Synonym Game* . WORK IN PAIRS. ONE PERSON TYPES IN A COMMON WORD TO BE LOOKED UP IN THE COMPUTER'S THESAURUS. THE OTHER PERSON MUST THINK UP AS MANY SYNONYMS AS POSSIBLE BEFORE THE COMPUTER REPLIES. COUNT 1 POINT FOR EACH SYNONYM AND 2 POINTS IF YOU CAN THINK UP A CORRECT SYNONYM WHICH IS NOT IN THE THESAURUS.

THE SYNONYM GAME

WORD	YOUR SYNONYMS	COMPUTER'S SYNONYMS	SCORE
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

WORKSHEET 9 PAGE 2

2. CAN YOU MATCH THESE WORDS AND THEIR SYNONYMS?

WORDS	SYNONYMS	
1. Clever.	Shrewd.....	Stout.....
2. Hate.	Avid.....	Succinct.....
3. Short.	Tarry.....	Dolorous.....
4. Sad.	Curt.....	Detest.....
5. Greedy.	Obese.....	Concise.....
6. Fat.	Morose.....	Voracious.....
7. Stay.	Sage.....	Loathe.....
	Linger.....	Melancholy....
	Adroit.....	Corpulent.....
	Repose.....	Avaricious....
	Paunchy.....	Lugubrious....

WRITE THE NUMBER OF THE WORD BESIDE EACH SYNONYM.

Just as an artist needs to find paint with the right shade of colour to create an interesting and lifelike picture, so a writer must choose words with the right shade of meaning to describe a scene or explain her thoughts. A thesaurus can help you to pick lively and suitable words.

3. LOOK OVER THE DESCRIPTION WHICH YOU WROTE LAST WEEK. DO ANY WORDS SEEM VAGUE OR DULL? USE THE THESAURUS TO FIND MORE PRECISE AND INTERESTING SYNONYMS AND THEN, WITH THE *change* COMMAND, INCLUDE THEM IN THE STORY.

WORKSHEET 10 LAZY WORDS

Sometimes, when we can't be bothered to think up clear, precise describing words we use *lazy words* instead. The lazy word *thing*, for example, is used four times in this description:

> Freddy is made up of wires and things and metal. Things which are made up of metal and wires are called robots. The man who operates Freddy sometimes has to put the thing in place for Freddy to pick up. Freddy certainly likes playing and making things, but he cannot run or walk about because he has no feet.

1. READ OVER THE DESCRIPTION ABOVE (WRITTEN BY A VISITOR TO FREDDY). TRY AND REWRITE THE DESCRIPTION, USING A CLEARER AND MORE PRECISE WORD FOR EACH OCCURRENCE OF 'THING'.

.....

.....

.....

.....

.....

.....

NOW WRITE DOWN ANY OTHER 'LAZY WORDS' THAT YOU CAN THINK OF.

.....

Lazy words make a description vague - they are like smears or fuzzy blobs of paint on a picture.

2. USE THE COMPUTER PROGRAM'S 'THING' RULE TO CHANGE ALL THE NOUNS IN YOUR OWN DESCRIPTION OF THE ROOM INTO LAZY WORDS.

On the other hand too much unimportant detail just clutters up a description.

WORKSHEET 10 PAGE 2

The room was oblong with a ceiling and a floor, kept apart by four walls. In one of the walls was a door, and facing it, a window made of glass. Halfway down the right side of the door was a handle, which could be turned to make it open inwards.....

Here the description mainly tells the reader what she already knows (that a normal room has four walls, and that windows are made of glass).

3. LOOK OVER YOUR DESCRIPTION OF THE ROOM. USE THE 'WALTER' PROGRAM TO:
   A) CHANGE ANY LAZY WORDS INTO MORE PRECISE ONES.
   B) ALTER ANY PARTS OF THE DESCRIPTION THAT ARE OBVIOUS OR UNINTERESTING.

Here are some points to remember about writing descriptions:

1. Planning - Try and form a picture of the scene in your mind. Pretend that you are the reader. Ask questions about the scene. What shape are the objects? What colours? What are they doing?

2. Writing - Concentrate on the unusual parts of the scene. Use sentences like: 'He was an ordinary looking person apart from...' or 'What made the room seem strange was.....'

3. Changing - Change those words which you feel are vague, boring or obvious.

THAT'S ALL ABOUT WRITING DESCRIPTIONS. NOW IT'S TIME TO PLAY

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